23x Indoor Speed Dome Camera

CAM-ISD52

User's Manual

CONTENTS

1. Safety Information 4
2. Preface 5
3. Features 6
4. Appearance 7
4.1 DIP switches 8
4.2 Set Up Device ID Number 9
4.3 RS-485 Network and Impedance 27
5. Mount the Speed Dome Camera 30
5.1 Mounting Accessory 31
5.2 Ceiling-drop mount (with CAM-CM) 32
5.3 Wall mount (with CAM-WM) 33
5.4 Use External Housing (with CAM-OH) 35
6. Connecting Wires 38
6.1 Power 38
6.2 Video 39
6.3 RS-485 40
6.4 Alarm Input and Alarm Output 40
7. Applications 43
7.1 Controllers and RS-485 43
7.2 Connect single dome to console 44
7.3 Connect two or more domes to console 47
8. Camera setup --- OSD functions 50
8.1 OSD operation 50
8.2 System Info 51
8.3 Display 51
8.4 Camera 52

8.5 Scan 61
8.6 Control 63
8.7 Privacy Mask 64
8.8 Alarm 66
9. Pre-defined System Functions 69
10. Specification 70

1. Safety Information

Federal Communication Commission (FCC) Statement

NOTE: This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference, the user is encouraged to try to correct the interference by on or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Correct the equipment into an output o a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio / television technician for help
- FCC Caution: To assure continued compliance, any change or modification not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Notice for customers in Canada

CAUTION

- This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations.

ATTENTION

- Cet appareil numerique de laclasse B respects toutes les exigencies du Reglement sur le materiel brouilleur du Canada

2. Preface

Congratulations for the purchasing of the world most compact PTZ (**P**an, **T**ilt and **Z**oom) camera. The camera is designed and manufactured not just to meet the requirements for traditional CCTV and modern digital surveillance, but also increase the systems' overall performance.

This camera line incorporates high resolution color CCD, with two types of lens available: power zoom or vari-focal. Some image and special effect functions are related to the type of lens, while other functions are the same across the line.

The PT mechanism provides controllable panning (360^{o}) and tilting (90^{o})+ auto-rotation (180^{o}) functions, giving users the capability to manipulate the camera for precise locating on target. The built-in micro-controller allows users to program up to 64 presets for quick and accurate capture to specific view positions. Moving speed, ranging from 0.25 to 300 degrees per second and is selectable to controller, is variable in 16 optional levels. Dwell time of each view position is also selectable from 1second up to 255 seconds.

System function includes I/O for alarm function for intrusion management, ID setup (maximum to 128) and impedance matching option for multiple node system, 3 control protocols, 3 options of baud rates, RS-485 communication format. This device is driven by DC12V power. It can be controlled by keyboard, PC, video server or standalone DVR.

For the power zoom version, a number of image related functions (such as DSP functions, lens functions, special effects of video…) are managed via OSD (On-Screen-Display) menu. These functions are explained in the section of OSD with details. The CCD can be set up for automatic switching to black-white mode for night-vision ready when illumination is low.

This camera is designed to be water-resistant for outdoor use, under the condition of normal temperature range from -10^{o} to 50^{o} C. A companion outdoor housing is also available for severe weather condition (extreme low or high temperature environment).

3. Features

- Compact Size of 5” (135 mm)(10x zoom version 4-1/2” -114 mm) diameter
- Continuous panning for 360°; Tilt for180° (10x zoom version is 90°)
- Fast rotation speed, up to 240° per second
- RS-485 digital control, supporting multi-nude topology
- BNC connector for video output
- Programmable for view position, speed and dwell
- View position preset, up to 128 points
- Auto-pan and 4 groups of tour
- 8 alarm inputs and 2 alarm outputs
- Compatible to Pelco D/P and Samsung protocols
- ID ranges from 1 to 1,024
- IR remote control ready
- Compatible with keyboard and DVR for CCTV system
- Compatible with PC and video server for WAN / LAN surveillance
- 12V DC or 24V AC power input (AC24V for outdoor housing)
- Embedded, surface, wall and ceiling mount
- External housing for outdoor environment (Option)

4. Appearance

4.1 To Access DIP Switches

Before the camera is mounted in place, be sure the following four settings are properly executed, or the camera may fail the control:

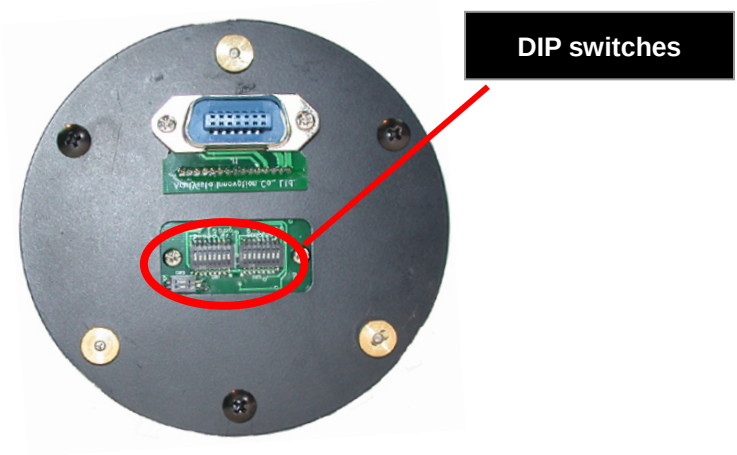
- **Camera ID setup**
- **Protocol selection**
- **Baud rate selection**
- **Termination impedance**

Tools:

Use pencil, pincer, paper clip or small flat screw driver, to move the lever of DIP switch

Access points:

The DIP switches are located on the bottom of the dome cameras:



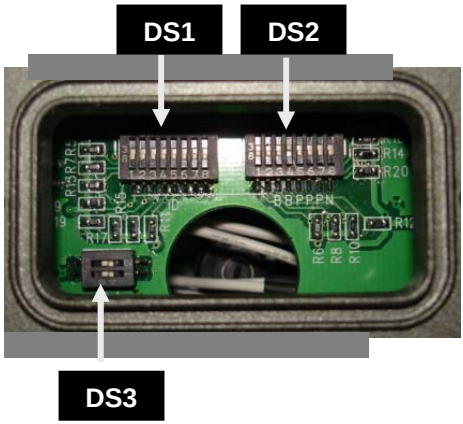
4.1 DIP switches

Overview of DIP switches

There are three sets of DIP switch on board for different setup purposes.

location #	bit quantity	used for
DS1+DS2(P1&2)	10	Device ID setup
DS2(P3~P7)	5	Protocol / baud rate setup
DS3	2	Network impedance

Refer to the picture on below for DIP switch locations.



The following paragraphs are providing the detail descriptions of the three main setups. Installer should read it with care, before starts doing the hardware mounting and cabling work.

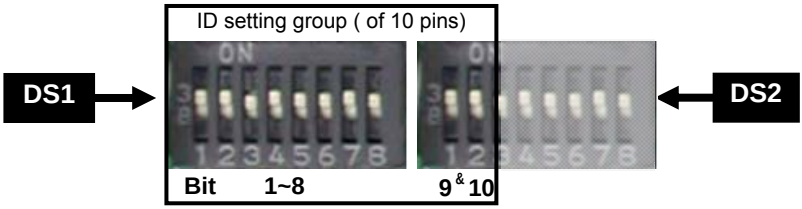
4.2 Set Up Device ID Number

To build correct network for control communication, every speed dome camera in the network must have an **unique ID number**, which is set by the bit 1 to 10 of a DIP switch **DS1(bit1-8) & DS2(bit 1~2).**

Note: Factory default of device ID is 1

remark: Dash line "---" in tables means to set the bit to "OFF" position

- Find DIP switch DS1 & DS2 on the PC board



- Complete ID setting involves the whole DS1 (as 1-8) and the two left pins of DS2 (as 9 and 10) (see picture on above)
- Refer to the tables in the following pages for ID setting (which shows the assignment of each pin for different ID numbered from 1 to 1024)
- The highest ID number of this camera is 1024.
- All the speed domes in a network must have their unique ID. It is highly recommended to installers, for future maintenance efficiency and users' convenience, to mark the ID of each camera onto its corresponding location on the site map, and make out a list of cameras with their ID numbers.
- The DIP switch pin assignment for ID setup is in binary format.

ID table (1 ~ 64)

ID	1	2	3	4	5	6	7	8	9	10
1	--	--	--	--	--	--	--	--	--	--
2	on	--	--	--	--	--	--	--	--	--
3	--	on	--	--	--	--	--	--	--	--
4	on	on	--	--	--	--	--	--	--	--
5	--	--	on	--	--	--	--	--	--	--
6	on	--	on	--	--	--	--	--	--	--
7	--	on	on	--	--	--	--	--	--	--
8	on	on	on	--	--	--	--	--	--	--
9	--	--	--	on	--	--	--	--	--	--
10	on	--	--	on	--	--	--	--	--	--
11	--	on	--	on	--	--	--	--	--	--
12	on	on	--	on	--	--	--	--	--	--
13	--	--	on	on	--	--	--	--	--	--
14	on	--	on	on	--	--	--	--	--	--
15	--	on	on	on	--	--	--	--	--	--
16	on	on	on	on	--	--	--	--	--	--
17	--	--	--	--	on	--	--	--	--	--
18	on	--	--	--	on	--	--	--	--	--
19	--	on	--	--	on	--	--	--	--	--
20	on	on	--	--	on	--	--	--	--	--
21	--	--	on	--	on	--	--	--	--	--
22	on	--	on	--	on	--	--	--	--	--
23	--	on	on	--	on	--	--	--	--	--
24	on	on	on	--	on	--	--	--	--	--
25	--	--	--	on	on	--	--	--	--	--
26	on	--	--	on	on	--	--	--	--	--
27	--	on	--	on	on	--	--	--	--	--
28	on	on	--	on	on	--	--	--	--	--
29	--	--	on	on	on	--	--	--	--	--
30	on	--	on	on	on	--	--	--	--	--
31	--	on	on	on	on	--	--	--	--	--
32	on	on	on	on	on	--	--	--	--	--

ID	1	2	3	4	5	6	7	8	9	10
33	--	--	--	--	--	on	--	--	--	--
34	on	--	--	--	--	on	--	--	--	--
35	--	on	--	--	--	on	--	--	--	--
36	on	on	--	--	--	on	--	--	--	--
37	--	--	on	--	--	on	--	--	--	--
38	on	--	on	--	--	on	--	--	--	--
39	--	on	on	--	--	on	--	--	--	--
40	on	on	on	--	--	on	--	--	--	--
41	--	--	--	on	--	on	--	--	--	--
42	on	--	--	on	--	on	--	--	--	--
43	--	on	--	on	--	on	--	--	--	--
44	on	on	--	on	--	on	--	--	--	--
45	--	--	on	on	--	on	--	--	--	--
46	on	--	on	on	--	on	--	--	--	--
47	--	on	on	on	--	on	--	--	--	--
48	on	on	on	on	--	on	--	--	--	--
49	--	--	--	--	on	on	--	--	--	--
50	on	--	--	--	on	on	--	--	--	--
51	--	on	--	--	on	on	--	--	--	--
52	on	on	--	--	on	on	--	--	--	--
53	--	--	on	--	on	on	--	--	--	--
54	on	--	on	--	on	on	--	--	--	--
55	--	on	on	--	on	on	--	--	--	--
56	on	on	on	--	on	on	--	--	--	--
57	--	--	--	on	on	on	--	--	--	--
58	on	--	--	on	on	on	--	--	--	--
59	--	on	--	on	on	on	--	--	--	--
60	on	on	--	on	on	on	--	--	--	--
61	--	--	on	on	on	on	--	--	--	--
62	on	--	on	on	on	on	--	--	--	--
63	--	on	on	on	on	on	--	--	--	--
64	on	on	on	on	on	on	--	--	--	--

ID table (65 ~ 128)

ID	1	2	3	4	5	6	7	8	9	10
65	--	--	--	--	--	--	on	--	--	--
66	on	--	--	--	--	--	on	--	--	--
67	--	on	--	--	--	--	on	--	--	--
68	on	on	--	--	--	--	on	--	--	--
69	--	--	on	--	--	--	on	--	--	--
70	on	--	on	--	--	--	on	--	--	--
71	--	on	on	--	--	--	on	--	--	--
72	on	on	on	--	--	--	on	--	--	--
73	--	--	--	on	--	--	on	--	--	--
74	on	--	--	on	--	--	on	--	--	--
75	--	on	--	on	--	--	on	--	--	--
76	on	on	--	on	--	--	on	--	--	--
77	--	--	on	on	--	--	on	--	--	--
78	on	--	on	on	--	--	on	--	--	--
79	--	on	on	on	--	--	on	--	--	--
80	on	on	on	on	--	--	on	--	--	--
81	--	--	--	--	on	--	on	--	--	--
82	on	--	--	--	on	--	on	--	--	--
83	--	on	--	--	on	--	on	--	--	--
84	on	on	--	--	on	--	on	--	--	--
85	--	--	on	--	on	--	on	--	--	--
86	on	--	on	--	on	--	on	--	--	--
87	--	on	on	--	on	--	on	--	--	--
88	on	on	on	--	on	--	on	--	--	--
89	--	--	--	on	on	--	on	--	--	--
90	on	--	--	on	on	--	on	--	--	--
91	--	on	--	on	on	--	on	--	--	--
92	on	on	--	on	on	--	on	--	--	--
93	--	--	on	on	on	--	on	--	--	--
94	on	--	on	on	on	--	on	--	--	--
95	--	on	on	on	on	--	on	--	--	--
96	on	on	on	on	on	--	on	--	--	--

ID	1	2	3	4	5	6	7	8	9	10
97	--	--	--	--	--	on	on	--	--	--
98	on	--	--	--	--	on	on	--	--	--
99	--	on	--	--	--	on	on	--	--	--
100	on	on	--	--	--	on	on	--	--	--
101	--	--	on	--	--	on	on	--	--	--
102	on	--	on	--	--	on	on	--	--	--
103	--	on	on	--	--	on	on	--	--	--
104	on	on	on	--	--	on	on	--	--	--
105	--	--	--	on	--	on	on	--	--	--
106	on	--	--	on	--	on	on	--	--	--
107	--	on	--	on	--	on	on	--	--	--
108	on	on	--	on	--	on	on	--	--	--
109	--	--	on	on	--	on	on	--	--	--
110	on	--	on	on	--	on	on	--	--	--
111	--	on	on	on	--	on	on	--	--	--
112	on	on	on	on	--	on	on	--	--	--
113	--	--	--	--	on	on	on	--	--	--
114	on	--	--	--	on	on	on	--	--	--
115	--	on	--	--	on	on	on	--	--	--
116	on	on	--	--	on	on	on	--	--	--
117	--	--	on	--	on	on	on	--	--	--
118	on	--	on	--	on	on	on	--	--	--
119	--	on	on	--	on	on	on	--	--	--
120	on	on	on	--	on	on	on	--	--	--
121	--	--	--	on	on	on	on	--	--	--
122	on	--	--	on	on	on	on	--	--	--
123	--	on	--	on	on	on	on	--	--	--
124	on	on	--	on	on	on	on	--	--	--
125	--	--	on	on	on	on	on	--	--	--
126	on	--	on	on	on	on	on	--	--	--
127	--	on	on	on	on	on	on	--	--	--
128	on	on	on	on	on	on	on	--	--	--

ID table (129 ~ 256)

ID	1	2	3	4	5	6	7	8	9	10
129	--	--	--	--	--	--	--	on	--	--
130	on	--	--	--	--	--	--	on	--	--
131	--	on	--	--	--	--	--	on	--	--
132	on	on	--	--	--	--	--	on	--	--
133	--	--	on	--	--	--	--	on	--	--
134	on	--	on	--	--	--	--	on	--	--
135	--	on	on	--	--	--	--	on	--	--
136	on	on	on	--	--	--	--	on	--	--
137	--	--	--	on	--	--	--	on	--	--
138	on	--	--	on	--	--	--	on	--	--
139	--	on	--	on	--	--	--	on	--	--
140	on	on	--	on	--	--	--	on	--	--
141	--	--	on	on	--	--	--	on	--	--
142	on	--	on	on	--	--	--	on	--	--
143	--	on	on	on	--	--	--	on	--	--
144	on	on	on	on	--	--	--	on	--	--
145	--	--	--	--	on	--	--	on	--	--
146	on	--	--	--	on	--	--	on	--	--
147	--	on	--	--	on	--	--	on	--	--
148	on	on	--	--	on	--	--	on	--	--
149	--	--	on	--	on	--	--	on	--	--
150	on	--	on	--	on	--	--	on	--	--
151	--	on	on	--	on	--	--	on	--	--
152	on	on	on	--	on	--	--	on	--	--
153	--	--	--	on	on	--	--	on	--	--
154	on	--	--	on	on	--	--	on	--	--
155	--	on	--	on	on	--	--	on	--	--
156	on	on	--	on	on	--	--	on	--	--
157	--	--	on	on	on	--	--	on	--	--
158	on	--	on	on	on	--	--	on	--	--
159	--	on	on	on	on	--	--	on	--	--
160	on	on	on	on	on	--	--	on	--	--

ID	1	2	3	4	5	6	7	8	9	10
161	--	--	--	--	--	on	--	on	--	--
162	on	--	--	--	--	on	--	on	--	--
163	--	on	--	--	--	on	--	on	--	--
164	on	on	--	--	--	on	--	on	--	--
165	--	--	on	--	--	on	--	on	--	--
166	on	--	on	--	--	on	--	on	--	--
167	--	on	on	--	--	on	--	on	--	--
168	on	on	on	--	--	on	--	on	--	--
169	--	--	--	on	--	on	--	on	--	--
170	on	--	--	on	--	on	--	on	--	--
171	--	on	--	on	--	on	--	on	--	--
172	on	on	--	on	--	on	--	on	--	--
173	--	--	on	on	--	on	--	on	--	--
174	on	--	on	on	--	on	--	on	--	--
175	--	on	on	on	--	on	--	on	--	--
176	on	on	on	on	--	on	--	on	--	--
177	--	--	--	--	on	on	--	on	--	--
178	on	--	--	--	on	on	--	on	--	--
179	--	on	--	--	on	on	--	on	--	--
180	on	on	--	--	on	on	--	on	--	--
181	--	--	on	--	on	on	--	on	--	--
182	on	--	on	--	on	on	--	on	--	--
183	--	on	on	--	on	on	--	on	--	--
184	on	on	on	--	on	on	--	on	--	--
185	--	--	--	on	on	on	--	on	--	--
186	on	--	--	on	on	on	--	on	--	--
187	--	on	--	on	on	on	--	on	--	--
188	on	on	--	on	on	on	--	on	--	--
189	--	--	on	on	on	on	--	on	--	--
190	on	--	on	on	on	on	--	on	--	--
191	--	on	on	on	on	on	--	on	--	--
192	on	on	on	on	on	on	--	on	--	--

ID table (193 ~ 256)

ID	1	2	3	4	5	6	7	8	9	10
193	--	--	--	--	--	--	on	on	--	--
194	on	--	--	--	--	--	on	on	--	--
195	--	on	--	--	--	--	on	on	--	--
196	on	on	--	--	--	--	on	on	--	--
197	--	--	on	--	--	--	on	on	--	--
198	on	--	on	--	--	--	on	on	--	--
199	--	on	on	--	--	--	on	on	--	--
200	on	on	on	--	--	--	on	on	--	--
201	--	--	--	on	--	--	on	on	--	--
202	on	--	--	on	--	--	on	on	--	--
203	--	on	--	on	--	--	on	on	--	--
204	on	on	--	on	--	--	on	on	--	--
205	--	--	on	on	--	--	on	on	--	--
206	on	--	on	on	--	--	on	on	--	--
207	--	on	on	on	--	--	on	on	--	--
208	on	on	on	on	--	--	on	on	--	--
209	--	--	--	--	on	--	on	on	--	--
210	on	--	--	--	on	--	on	on	--	--
211	--	on	--	--	on	--	on	on	--	--
212	on	on	--	--	on	--	on	on	--	--
213	--	--	on	--	on	--	on	on	--	--
214	on	--	on	--	on	--	on	on	--	--
215	--	on	on	--	on	--	on	on	--	--
216	on	on	on	--	on	--	on	on	--	--
217	--	--	--	on	on	--	on	on	--	--
218	on	--	--	on	on	--	on	on	--	--
219	--	on	--	on	on	--	on	on	--	--
220	on	on	--	on	on	--	on	on	--	--
221	--	--	on	on	on	--	on	on	--	--
222	on	--	on	on	on	--	on	on	--	--
223	--	on	on	on	on	--	on	on	--	--
224	on	on	on	on	on	--	on	on	--	--

ID	1	2	3	4	5	6	7	8	9	10
225	--	--	--	--	--	on	on	on	--	--
226	on	--	--	--	--	on	on	on	--	--
227	--	on	--	--	--	on	on	on	--	--
228	on	on	--	--	--	on	on	on	--	--
229	--	--	on	--	--	on	on	on	--	--
230	on	--	on	--	--	on	on	on	--	--
231	--	on	on	--	--	on	on	on	--	--
232	on	on	on	--	--	on	on	on	--	--
233	--	--	--	on	--	on	on	on	--	--
234	on	--	--	on	--	on	on	on	--	--
235	--	on	--	on	--	on	on	on	--	--
236	on	on	--	on	--	on	on	on	--	--
237	--	--	on	on	--	on	on	on	--	--
238	on	--	on	on	--	on	on	on	--	--
239	--	on	on	on	--	on	on	on	--	--
240	on	on	on	on	--	on	on	on	--	--
241	--	--	--	--	on	on	on	on	--	--
242	on	--	--	--	on	on	on	on	--	--
243	--	on	--	--	on	on	on	on	--	--
244	on	on	--	--	on	on	on	on	--	--
245	--	--	on	--	on	on	on	on	--	--
246	on	--	on	--	on	on	on	on	--	--
247	--	on	on	--	on	on	on	on	--	--
248	on	on	on	--	on	on	on	on	--	--
249	--	--	--	on	on	on	on	on	--	--
250	on	--	--	on	on	on	on	on	--	--
251	--	on	--	on	on	on	on	on	--	--
252	on	on	--	on	on	on	on	on	--	--
253	--	--	on	on	on	on	on	on	--	--
254	on	--	on	on	on	on	on	on	--	--
255	--	on	on	on	on	on	on	on	--	--
256	on	on	on	on	on	on	on	on	--	--

ID table (257 ~ 320)

ID	1	2	3	4	5	6	7	8	9	10
257	--	--	--	--	--	--	--	--	on	--
258	on	--	--	--	--	--	--	--	on	--
259	--	on	--	--	--	--	--	--	on	--
260	on	on	--	--	--	--	--	--	on	--
261	--	--	on	--	--	--	--	--	on	--
262	on	--	on	--	--	--	--	--	on	--
263	--	on	on	--	--	--	--	--	on	--
264	on	on	on	--	--	--	--	--	on	--
265	--	--	--	on	--	--	--	--	on	--
266	on	--	--	on	--	--	--	--	on	--
267	--	on	--	on	--	--	--	--	on	--
268	on	on	--	on	--	--	--	--	on	--
269	--	--	on	on	--	--	--	--	on	--
270	on	--	on	on	--	--	--	--	on	--
271	--	on	on	on	--	--	--	--	on	--
272	on	on	on	on	--	--	--	--	on	--
273	--	--	--	--	on	--	--	--	on	--
274	on	--	--	--	on	--	--	--	on	--
275	--	on	--	--	on	--	--	--	on	--
276	on	on	--	--	on	--	--	--	on	--
277	--	--	on	--	on	--	--	--	on	--
278	on	--	on	--	on	--	--	--	on	--
279	--	on	on	--	on	--	--	--	on	--
280	on	on	on	--	on	--	--	--	on	--
281	--	--	--	on	on	--	--	--	on	--
282	on	--	--	on	on	--	--	--	on	--
283	--	on	--	on	on	--	--	--	on	--
284	on	on	--	on	on	--	--	--	on	--
285	--	--	on	on	on	--	--	--	on	--
286	on	--	on	on	on	--	--	--	on	--
287	--	on	on	on	on	--	--	--	on	--
288	on	on	on	on	on	--	--	--	on	--

ID	1	2	3	4	5	6	7	8	9	10
289	--	--	--	--	--	on	--	--	on	--
290	on	--	--	--	--	on	--	--	on	--
291	--	on	--	--	--	on	--	--	on	--
292	on	on	--	--	--	on	--	--	on	--
293	--	--	on	--	--	on	--	--	on	--
294	on	--	on	--	--	on	--	--	on	--
295	--	on	on	--	--	on	--	--	on	--
296	on	on	on	--	--	on	--	--	on	--
297	--	--	--	on	--	on	--	--	on	--
298	on	--	--	on	--	on	--	--	on	--
299	--	on	--	on	--	on	--	--	on	--
300	on	on	--	on	--	on	--	--	on	--
301	--	--	on	on	--	on	--	--	on	--
302	on	--	on	on	--	on	--	--	on	--
303	--	on	on	on	--	on	--	--	on	--
304	on	on	on	on	--	on	--	--	on	--
305	--	--	--	--	on	on	--	--	on	--
306	on	--	--	--	on	on	--	--	on	--
307	--	on	--	--	on	on	--	--	on	--
308	on	on	--	--	on	on	--	--	on	--
309	--	--	on	--	on	on	--	--	on	--
310	on	--	on	--	on	on	--	--	on	--
311	--	on	on	--	on	on	--	--	on	--
312	on	on	on	--	on	on	--	--	on	--
313	--	--	--	on	on	on	--	--	on	--
314	on	--	--	on	on	on	--	--	on	--
315	--	on	--	on	on	on	--	--	on	--
316	on	on	--	on	on	on	--	--	on	--
317	--	--	on	on	on	on	--	--	on	--
318	on	--	on	on	on	on	--	--	on	--
319	--	on	on	on	on	on	--	--	on	--
320	on	on	on	on	on	on	--	--	on	--

ID table (321 ~ 384)

ID	1	2	3	4	5	6	7	8	9	10
321	--	--	--	--	--	--	on	--	on	--
322	on	--	--	--	--	--	on	--	on	--
323	--	on	--	--	--	--	on	--	on	--
324	on	on	--	--	--	--	on	--	on	--
325	--	--	on	--	--	--	on	--	on	--
326	on	--	on	--	--	--	on	--	on	--
327	--	on	on	--	--	--	on	--	on	--
328	on	on	on	--	--	--	on	--	on	--
329	--	--	--	on	--	--	on	--	on	--
330	on	--	--	on	--	--	on	--	on	--
331	--	on	--	on	--	--	on	--	on	--
332	on	on	--	on	--	--	on	--	on	--
333	--	--	on	on	--	--	on	--	on	--
334	on	--	on	on	--	--	on	--	on	--
335	--	on	on	on	--	--	on	--	on	--
336	on	on	on	on	--	--	on	--	on	--
337	--	--	--	--	on	--	on	--	on	--
338	on	--	--	--	on	--	on	--	on	--
339	--	on	--	--	on	--	on	--	on	--
340	on	on	--	--	on	--	on	--	on	--
341	--	--	on	--	on	--	on	--	on	--
342	on	--	on	--	on	--	on	--	on	--
343	--	on	on	--	on	--	on	--	on	--
344	on	on	on	--	on	--	on	--	on	--
345	--	--	--	on	on	--	on	--	on	--
346	on	--	--	on	on	--	on	--	on	--
347	--	on	--	on	on	--	on	--	on	--
348	on	on	--	on	on	--	on	--	on	--
349	--	--	on	on	on	--	on	--	on	--
350	on	--	on	on	on	--	on	--	on	--
351	--	on	on	on	on	--	on	--	on	--
352	on	on	on	on	on	--	on	--	on	--

ID	1	2	3	4	5	6	7	8	9	10
353	--	--	--	--	--	on	on	--	on	--
354	on	--	--	--	--	on	on	--	on	--
355	--	on	--	--	--	on	on	--	on	--
356	on	on	--	--	--	on	on	--	on	--
357	--	--	on	--	--	on	on	--	on	--
358	on	--	on	--	--	on	on	--	on	--
359	--	on	on	--	--	on	on	--	on	--
360	on	on	on	--	--	on	on	--	on	--
361	--	--	--	on	--	on	on	--	on	--
362	on	--	--	on	--	on	on	--	on	--
363	--	on	--	on	--	on	on	--	on	--
364	on	on	--	on	--	on	on	--	on	--
365	--	--	on	on	--	on	on	--	on	--
366	on	--	on	on	--	on	on	--	on	--
367	--	on	on	on	--	on	on	--	on	--
368	on	on	on	on	--	on	on	--	on	--
369	--	--	--	--	on	on	on	--	on	--
370	on	--	--	--	on	on	on	--	on	--
371	--	on	--	--	on	on	on	--	on	--
372	on	on	--	--	on	on	on	--	on	--
373	--	--	on	--	on	on	on	--	on	--
374	on	--	on	--	on	on	on	--	on	--
375	--	on	on	--	on	on	on	--	on	--
376	on	on	on	--	on	on	on	--	on	--
377	--	--	--	on	on	on	on	--	on	--
378	on	--	--	on	on	on	on	--	on	--
379	--	on	--	on	on	on	on	--	on	--
380	on	on	--	on	on	on	on	--	on	--
381	--	--	on	on	on	on	on	--	on	--
382	on	--	on	on	on	on	on	--	on	--
383	--	on	on	on	on	on	on	--	on	--
384	on	on	on	on	on	on	on	--	on	--

ID table (385 ~ 448)

ID	1	2	3	4	5	6	7	8	9	10
385	--	--	--	--	--	--	--	on	on	--
386	on	--	--	--	--	--	--	on	on	--
387	--	on	--	--	--	--	--	on	on	--
388	on	on	--	--	--	--	--	on	on	--
389	--	--	on	--	--	--	--	on	on	--
390	on	--	on	--	--	--	--	on	on	--
391	--	on	on	--	--	--	--	on	on	--
392	on	on	on	--	--	--	--	on	on	--
393	--	--	--	on	--	--	--	on	on	--
394	on	--	--	on	--	--	--	on	on	--
395	--	on	--	on	--	--	--	on	on	--
396	on	on	--	on	--	--	--	on	on	--
397	--	--	on	on	--	--	--	on	on	--
398	on	--	on	on	--	--	--	on	on	--
399	--	on	on	on	--	--	--	on	on	--
400	on	on	on	on	--	--	--	on	on	--
401	--	--	--	--	on	--	--	on	on	--
402	on	--	--	--	on	--	--	on	on	--
403	--	on	--	--	on	--	--	on	on	--
404	on	on	--	--	on	--	--	on	on	--
405	--	--	on	--	on	--	--	on	on	--
406	on	--	on	--	on	--	--	on	on	--
407	--	on	on	--	on	--	--	on	on	--
408	on	on	on	--	on	--	--	on	on	--
409	--	--	--	on	on	--	--	on	on	--
410	on	--	--	on	on	--	--	on	on	--
411	--	on	--	on	on	--	--	on	on	--
412	on	on	--	on	on	--	--	on	on	--
413	--	--	on	on	on	--	--	on	on	--
414	on	--	on	on	on	--	--	on	on	--
415	--	on	on	on	on	--	--	on	on	--
416	on	on	on	on	on	--	--	on	on	--

ID	1	2	3	4	5	6	7	8	9	10
417	--	--	--	--	--	on	--	on	on	--
418	on	--	--	--	--	on	--	on	on	--
419	--	on	--	--	--	on	--	on	on	--
420	on	on	--	--	--	on	--	on	on	--
421	--	--	on	--	--	on	--	on	on	--
422	on	--	on	--	--	on	--	on	on	--
423	--	on	on	--	--	on	--	on	on	--
424	on	on	on	--	--	on	--	on	on	--
425	--	--	--	on	--	on	--	on	on	--
426	on	--	--	on	--	on	--	on	on	--
427	--	on	--	on	--	on	--	on	on	--
428	on	on	--	on	--	on	--	on	on	--
429	--	--	on	on	--	on	--	on	on	--
430	on	--	on	on	--	on	--	on	on	--
431	--	on	on	on	--	on	--	on	on	--
432	on	on	on	on	--	on	--	on	on	--
433	--	--	--	--	on	on	--	on	on	--
434	on	--	--	--	on	on	--	on	on	--
435	--	on	--	--	on	on	--	on	on	--
436	on	on	--	--	on	on	--	on	on	--
437	--	--	on	--	on	on	--	on	on	--
438	on	--	on	--	on	on	--	on	on	--
439	--	on	on	--	on	on	--	on	on	--
440	on	on	on	--	on	on	--	on	on	--
441	--	--	--	on	on	on	--	on	on	--
442	on	--	--	on	on	on	--	on	on	--
443	--	on	--	on	on	on	--	on	on	--
444	on	on	--	on	on	on	--	on	on	--
445	--	--	on	on	on	on	--	on	on	--
446	on	--	on	on	on	on	--	on	on	--
447	--	on	on	on	on	on	--	on	on	--
448	on	on	on	on	on	on	--	on	on	--

ID table (449 ~ 512)

ID	1	2	3	4	5	6	7	8	9	10
449	--	--	--	--	--	--	on	on	on	--
450	on	--	--	--	--	--	on	on	on	--
451	--	on	--	--	--	--	on	on	on	--
452	on	on	--	--	--	--	on	on	on	--
453	--	--	on	--	--	--	on	on	on	--
454	on	--	on	--	--	--	on	on	on	--
455	--	on	on	--	--	--	on	on	on	--
456	on	on	on	--	--	--	on	on	on	--
457	--	--	--	on	--	--	on	on	on	--
458	on	--	--	on	--	--	on	on	on	--
459	--	on	--	on	--	--	on	on	on	--
460	on	on	--	on	--	--	on	on	on	--
461	--	--	on	on	--	--	on	on	on	--
462	on	--	on	on	--	--	on	on	on	--
463	--	on	on	on	--	--	on	on	on	--
464	on	on	on	on	--	--	on	on	on	--
465	--	--	--	--	on	--	on	on	on	--
466	on	--	--	--	on	--	on	on	on	--
467	--	on	--	--	on	--	on	on	on	--
468	on	on	--	--	on	--	on	on	on	--
469	--	--	on	--	on	--	on	on	on	--
470	on	--	on	--	on	--	on	on	on	--
471	--	on	on	--	on	--	on	on	on	--
472	on	on	on	--	on	--	on	on	on	--
473	--	--	--	on	on	--	on	on	on	--
474	on	--	--	on	on	--	on	on	on	--
475	--	on	--	on	on	--	on	on	on	--
476	on	on	--	on	on	--	on	on	on	--
477	--	--	on	on	on	--	on	on	on	--
478	on	--	on	on	on	--	on	on	on	--
479	--	on	on	on	on	--	on	on	on	--
480	on	on	on	on	on	--	on	on	on	--

ID	1	2	3	4	5	6	7	8	9	10
481	--	--	--	--	--	on	on	on	on	--
482	on	--	--	--	--	on	on	on	on	--
483	--	on	--	--	--	on	on	on	on	--
484	on	on	--	--	--	on	on	on	on	--
485	--	--	on	--	--	on	on	on	on	--
486	on	--	on	--	--	on	on	on	on	--
487	--	on	on	--	--	on	on	on	on	--
488	on	on	on	--	--	on	on	on	on	--
489	--	--	--	on	--	on	on	on	on	--
490	on	--	--	on	--	on	on	on	on	--
491	--	on	--	on	--	on	on	on	on	--
492	on	on	--	on	--	on	on	on	on	--
493	--	--	on	on	--	on	on	on	on	--
494	on	--	on	on	--	on	on	on	on	--
495	--	on	on	on	--	on	on	on	on	--
496	on	on	on	on	--	on	on	on	on	--
497	--	--	--	--	on	on	on	on	on	--
498	on	--	--	--	on	on	on	on	on	--
499	--	on	--	--	on	on	on	on	on	--
500	on	on	--	--	on	on	on	on	on	--
501	--	--	on	--	on	on	on	on	on	--
502	on	--	on	--	on	on	on	on	on	--
503	--	on	on	--	on	on	on	on	on	--
504	on	on	on	--	on	on	on	on	on	--
505	--	--	--	on	on	on	on	on	on	--
506	on	--	--	on	on	on	on	on	on	--
507	--	on	--	on	on	on	on	on	on	--
508	on	on	--	on	on	on	on	on	on	--
509	--	--	on	on	on	on	on	on	on	--
510	on	--	on	on	on	on	on	on	on	--
511	--	on	on	on	on	on	on	on	on	--
512	on	on	on	on	on	on	on	on	on	

ID table (513 ~ 576)

ID	1	2	3	4	5	6	7	8	9	10
513	--	--	--	--	--	--	--	--	--	on
514	on	--	--	--	--	--	--	--	--	on
515	--	on	--	--	--	--	--	--	--	on
516	on	on	--	--	--	--	--	--	--	on
517	--	--	on	--	--	--	--	--	--	on
518	on	--	on	--	--	--	--	--	--	on
519	--	on	on	--	--	--	--	--	--	on
520	on	on	on	--	--	--	--	--	--	on
521	--	--	--	on	--	--	--	--	--	on
522	on	--	--	on	--	--	--	--	--	on
523	--	on	--	on	--	--	--	--	--	on
524	on	on	--	on	--	--	--	--	--	on
525	--	--	on	on	--	--	--	--	--	on
526	on	--	on	on	--	--	--	--	--	on
527	--	on	on	on	--	--	--	--	--	on
528	on	on	on	on	--	--	--	--	--	on
529	--	--	--	--	on	--	--	--	--	on
530	on	--	--	--	on	--	--	--	--	on
531	--	on	--	--	on	--	--	--	--	on
532	on	on	--	--	on	--	--	--	--	on
533	--	--	on	--	on	--	--	--	--	on
534	on	--	on	--	on	--	--	--	--	on
535	--	on	on	--	on	--	--	--	--	on
536	on	on	on	--	on	--	--	--	--	on
537	--	--	--	on	on	--	--	--	--	on
538	on	--	--	on	on	--	--	--	--	on
539	--	on	--	on	on	--	--	--	--	on
540	on	on	--	on	on	--	--	--	--	on
541	--	--	on	on	on	--	--	--	--	on
542	on	--	on	on	on	--	--	--	--	on
543	--	on	on	on	on	--	--	--	--	on
544	on	on	on	on	on	--	--	--	--	on

ID	1	2	3	4	5	6	7	8	9	10
545	--	--	--	--	--	on	--	--	--	on
546	on	--	--	--	--	on	--	--	--	on
547	--	on	--	--	--	on	--	--	--	on
548	on	on	--	--	--	on	--	--	--	on
549	--	--	on	--	--	on	--	--	--	on
550	on	--	on	--	--	on	--	--	--	on
551	--	on	on	--	--	on	--	--	--	on
552	on	on	on	--	--	on	--	--	--	on
553	--	--	--	on	--	on	--	--	--	on
554	on	--	--	on	--	on	--	--	--	on
555	--	on	--	on	--	on	--	--	--	on
556	on	on	--	on	--	on	--	--	--	on
557	--	--	on	on	--	on	--	--	--	on
558	on	--	on	on	--	on	--	--	--	on
559	--	on	on	on	--	on	--	--	--	on
560	on	on	on	on	--	on	--	--	--	on
561	--	--	--	--	on	on	--	--	--	on
562	on	--	--	--	on	on	--	--	--	on
563	--	on	--	--	on	on	--	--	--	on
564	on	on	--	--	on	on	--	--	--	on
565	--	--	on	--	on	on	--	--	--	on
566	on	--	on	--	on	on	--	--	--	on
567	--	on	on	--	on	on	--	--	--	on
568	on	on	on	--	on	on	--	--	--	on
569	--	--	--	on	on	on	--	--	--	on
570	on	--	--	on	on	on	--	--	--	on
571	--	on	--	on	on	on	--	--	--	on
572	on	on	--	on	on	on	--	--	--	on
573	--	--	on	on	on	on	--	--	--	on
574	on	--	on	on	on	on	--	--	--	on
575	--	on	on	on	on	on	--	--	--	on
576	on	on	on	on	on	on	--	--	--	on

ID table (577 ~ 640)

ID	1	2	3	4	5	6	7	8	9	10
577	--	--	--	--	--	--	on	--	--	on
578	on	--	--	--	--	--	on	--	--	on
579	--	on	--	--	--	--	on	--	--	on
580	on	on	--	--	--	--	on	--	--	on
581	--	--	on	--	--	--	on	--	--	on
582	on	--	on	--	--	--	on	--	--	on
583	--	on	on	--	--	--	on	--	--	on
584	on	on	on	--	--	--	on	--	--	on
585	--	--	--	on	--	--	on	--	--	on
586	on	--	--	on	--	--	on	--	--	on
587	--	on	--	on	--	--	on	--	--	on
588	on	on	--	on	--	--	on	--	--	on
589	--	--	on	on	--	--	on	--	--	on
590	on	--	on	on	--	--	on	--	--	on
591	--	on	on	on	--	--	on	--	--	on
592	on	on	on	on	--	--	on	--	--	on
593	--	--	--	--	on	--	on	--	--	on
594	on	--	--	--	on	--	on	--	--	on
595	--	on	--	--	on	--	on	--	--	on
596	on	on	--	--	on	--	on	--	--	on
597	--	--	on	--	on	--	on	--	--	on
598	on	--	on	--	on	--	on	--	--	on
599	--	on	on	--	on	--	on	--	--	on
600	on	on	on	--	on	--	on	--	--	on
601	--	--	--	on	on	--	on	--	--	on
602	on	--	--	on	on	--	on	--	--	on
603	--	on	--	on	on	--	on	--	--	on
604	on	on	--	on	on	--	on	--	--	on
605	--	--	on	on	on	--	on	--	--	on
606	on	--	on	on	on	--	on	--	--	on
607	--	on	on	on	on	--	on	--	--	on
608	on	on	on	on	on	--	on	--	--	on

ID	1	2	3	4	5	6	7	8	9	10
609	--	--	--	--	--	on	on	--	--	on
610	on	--	--	--	--	on	on	--	--	on
611	--	on	--	--	--	on	on	--	--	on
612	on	on	--	--	--	on	on	--	--	on
613	--	--	on	--	--	on	on	--	--	on
614	on	--	on	--	--	on	on	--	--	on
615	--	on	on	--	--	on	on	--	--	on
616	on	on	on	--	--	on	on	--	--	on
617	--	--	--	on	--	on	on	--	--	on
618	on	--	--	on	--	on	on	--	--	on
619	--	on	--	on	--	on	on	--	--	on
620	on	on	--	on	--	on	on	--	--	on
621	--	--	on	on	--	on	on	--	--	on
622	on	--	on	on	--	on	on	--	--	on
623	--	on	on	on	--	on	on	--	--	on
624	on	on	on	on	--	on	on	--	--	on
625	--	--	--	--	on	on	on	--	--	on
626	on	--	--	--	on	on	on	--	--	on
627	--	on	--	--	on	on	on	--	--	on
628	on	on	--	--	on	on	on	--	--	on
629	--	--	on	--	on	on	on	--	--	on
630	on	--	on	--	on	on	on	--	--	on
631	--	on	on	--	on	on	on	--	--	on
632	on	on	on	--	on	on	on	--	--	on
633	--	--	--	on	on	on	on	--	--	on
634	on	--	--	on	on	on	on	--	--	on
635	--	on	--	on	on	on	on	--	--	on
636	on	on	--	on	on	on	on	--	--	on
637	--	--	on	on	on	on	on	--	--	on
638	on	--	on	on	on	on	on	--	--	on
639	--	on	on	on	on	on	on	--	--	on
640	on	on	on	on	on	on	on	--	--	on

ID table (641 ~ 704)

ID	1	2	3	4	5	6	7	8	9	10
641	--	--	--	--	--	--	--	on	--	on
642	on	--	--	--	--	--	--	on	--	on
643	--	on	--	--	--	--	--	on	--	on
644	on	on	--	--	--	--	--	on	--	on
645	--	--	on	--	--	--	--	on	--	on
646	on	--	on	--	--	--	--	on	--	on
647	--	on	on	--	--	--	--	on	--	on
648	on	on	on	--	--	--	--	on	--	on
649	--	--	--	on	--	--	--	on	--	on
650	on	--	--	on	--	--	--	on	--	on
651	--	on	--	on	--	--	--	on	--	on
652	on	on	--	on	--	--	--	on	--	on
653	--	--	on	on	--	--	--	on	--	on
654	on	--	on	on	--	--	--	on	--	on
655	--	on	on	on	--	--	--	on	--	on
656	on	on	on	on	--	--	--	on	--	on
657	--	--	--	--	on	--	--	on	--	on
658	on	--	--	--	on	--	--	on	--	on
659	--	on	--	--	on	--	--	on	--	on
660	on	on	--	--	on	--	--	on	--	on
661	--	--	on	--	on	--	--	on	--	on
662	on	--	on	--	on	--	--	on	--	on
663	--	on	on	--	on	--	--	on	--	on
664	on	on	on	--	on	--	--	on	--	on
665	--	--	--	on	on	--	--	on	--	on
666	on	--	--	on	on	--	--	on	--	on
667	--	on	--	on	on	--	--	on	--	on
668	on	on	--	on	on	--	--	on	--	on
669	--	--	on	on	on	--	--	on	--	on
670	on	--	on	on	on	--	--	on	--	on
671	--	on	on	on	on	--	--	on	--	on
672	on	on	on	on	on	--	--	on	--	on

ID	1	2	3	4	5	6	7	8	9	10
673	--	--	--	--	--	on	--	on	--	on
674	on	--	--	--	--	on	--	on	--	on
675	--	on	--	--	--	on	--	on	--	on
676	on	on	--	--	--	on	--	on	--	on
677	--	--	on	--	--	on	--	on	--	on
678	on	--	on	--	--	on	--	on	--	on
679	--	on	on	--	--	on	--	on	--	on
680	on	on	on	--	--	on	--	on	--	on
681	--	--	--	on	--	on	--	on	--	on
682	on	--	--	on	--	on	--	on	--	on
683	--	on	--	on	--	on	--	on	--	on
684	on	on	--	on	--	on	--	on	--	on
685	--	--	on	on	--	on	--	on	--	on
686	on	--	on	on	--	on	--	on	--	on
687	--	on	on	on	--	on	--	on	--	on
688	on	on	on	on	--	on	--	on	--	on
689	--	--	--	--	on	on	--	on	--	on
690	on	--	--	--	on	on	--	on	--	on
691	--	on	--	--	on	on	--	on	--	on
692	on	on	--	--	on	on	--	on	--	on
693	--	--	on	--	on	on	--	on	--	on
694	on	--	on	--	on	on	--	on	--	on
695	--	on	on	--	on	on	--	on	--	on
696	on	on	on	--	on	on	--	on	--	on
697	--	--	--	on	on	on	--	on	--	on
698	on	--	--	on	on	on	--	on	--	on
699	--	on	--	on	on	on	--	on	--	on
700	on	on	--	on	on	on	--	on	--	on
701	--	--	on	on	on	on	--	on	--	on
702	on	--	on	on	on	on	--	on	--	on
703	--	on	on	on	on	on	--	on	--	on
704	on	on	on	on	on	on	--	on	--	on

ID table (705 ~ 768)

ID	1	2	3	4	5	6	7	8	9	10
705	--	--	--	--	--	--	on	on	--	on
706	on	--	--	--	--	--	on	on	--	on
707	--	on	--	--	--	--	on	on	--	on
708	on	on	--	--	--	--	on	on	--	on
709	--	--	on	--	--	--	on	on	--	on
710	on	--	on	--	--	--	on	on	--	on
711	--	on	on	--	--	--	on	on	--	on
712	on	on	on	--	--	--	on	on	--	on
713	--	--	--	on	--	--	on	on	--	on
714	on	--	--	on	--	--	on	on	--	on
715	--	on	--	on	--	--	on	on	--	on
716	on	on	--	on	--	--	on	on	--	on
717	--	--	on	on	--	--	on	on	--	on
718	on	--	on	on	--	--	on	on	--	on
719	--	on	on	on	--	--	on	on	--	on
720	on	on	on	on	--	--	on	on	--	on
721	--	--	--	--	on	--	on	on	--	on
722	on	--	--	--	on	--	on	on	--	on
723	--	on	--	--	on	--	on	on	--	on
724	on	on	--	--	on	--	on	on	--	on
725	--	--	on	--	on	--	on	on	--	on
726	on	--	on	--	on	--	on	on	--	on
727	--	on	on	--	on	--	on	on	--	on
728	on	on	on	--	on	--	on	on	--	on
729	--	--	--	on	on	--	on	on	--	on
730	on	--	--	on	on	--	on	on	--	on
731	--	on	--	on	on	--	on	on	--	on
732	on	on	--	on	on	--	on	on	--	on
733	--	--	on	on	on	--	on	on	--	on
734	on	--	on	on	on	--	on	on	--	on
735	--	on	on	on	on	--	on	on	--	on
736	on	on	on	on	on	--	on	on	--	on

ID	1	2	3	4	5	6	7	8	9	10
737	--	--	--	--	--	on	on	on	--	on
738	on	--	--	--	--	on	on	on	--	on
739	--	on	--	--	--	on	on	on	--	on
740	on	on	--	--	--	on	on	on	--	on
741	--	--	on	--	--	on	on	on	--	on
742	on	--	on	--	--	on	on	on	--	on
743	--	on	on	--	--	on	on	on	--	on
744	on	on	on	--	--	on	on	on	--	on
745	--	--	--	on	--	on	on	on	--	on
746	on	--	--	on	--	on	on	on	--	on
747	--	on	--	on	--	on	on	on	--	on
748	on	on	--	on	--	on	on	on	--	on
749	--	--	on	on	--	on	on	on	--	on
750	on	--	on	on	--	on	on	on	--	on
751	--	on	on	on	--	on	on	on	--	on
752	on	on	on	on	--	on	on	on	--	on
753	--	--	--	--	on	on	on	on	--	on
754	on	--	--	--	on	on	on	on	--	on
755	--	on	--	--	on	on	on	on	--	on
756	on	on	--	--	on	on	on	on	--	on
757	--	--	on	--	on	on	on	on	--	on
758	on	--	on	--	on	on	on	on	--	on
759	--	on	on	--	on	on	on	on	--	on
760	on	on	on	--	on	on	on	on	--	on
761	--	--	--	on	on	on	on	on	--	on
762	on	--	--	on	on	on	on	on	--	on
763	--	on	--	on	on	on	on	on	--	on
764	on	on	--	on	on	on	on	on	--	on
765	--	--	on	on	on	on	on	on	--	on
766	on	--	on	on	on	on	on	on	--	on
767	--	on	on	on	on	on	on	on	--	on
768	on	on	on	on	on	on	on	on		on

ID table (769 ~ 832)

ID	1	2	3	4	5	6	7	8	9	10
769	--	--	--	--	--	--	--	--	on	on
770	on	--	--	--	--	--	--	--	on	on
771	--	on	--	--	--	--	--	--	on	on
772	on	on	--	--	--	--	--	--	on	on
773	--	--	on	--	--	--	--	--	on	on
774	on	--	on	--	--	--	--	--	on	on
775	--	on	on	--	--	--	--	--	on	on
776	on	on	on	--	--	--	--	--	on	on
777	--	--	--	on	--	--	--	--	on	on
778	on	--	--	on	--	--	--	--	on	on
779	--	on	--	on	--	--	--	--	on	on
780	on	on	--	on	--	--	--	--	on	on
781	--	--	on	on	--	--	--	--	on	on
782	on	--	on	on	--	--	--	--	on	on
783	--	on	on	on	--	--	--	--	on	on
784	on	on	on	on	--	--	--	--	on	on
785	--	--	--	--	on	--	--	--	on	on
786	on	--	--	--	on	--	--	--	on	on
787	--	on	--	--	on	--	--	--	on	on
788	on	on	--	--	on	--	--	--	on	on
789	--	--	on	--	on	--	--	--	on	on
790	on	--	on	--	on	--	--	--	on	on
791	--	on	on	--	on	--	--	--	on	on
792	on	on	on	--	on	--	--	--	on	on
793	--	--	--	on	on	--	--	--	on	on
794	on	--	--	on	on	--	--	--	on	on
795	--	on	--	on	on	--	--	--	on	on
796	on	on	--	on	on	--	--	--	on	on
797	--	--	on	on	on	--	--	--	on	on
798	on	--	on	on	on	--	--	--	on	on
799	--	on	on	on	on	--	--	--	on	on
800	on	on	on	on	on	--	--	--	on	on

ID	1	2	3	4	5	6	7	8	9	10
801	--	--	--	--	--	on	--	--	on	on
802	on	--	--	--	--	on	--	--	on	on
803	--	on	--	--	--	on	--	--	on	on
804	on	on	--	--	--	on	--	--	on	on
805	--	--	on	--	--	on	--	--	on	on
806	on	--	on	--	--	on	--	--	on	on
807	--	on	on	--	--	on	--	--	on	on
808	on	on	on	--	--	on	--	--	on	on
809	--	--	--	on	--	on	--	--	on	on
810	on	--	--	on	--	on	--	--	on	on
811	--	on	--	on	--	on	--	--	on	on
812	on	on	--	on	--	on	--	--	on	on
813	--	--	on	on	--	on	--	--	on	on
814	on	--	on	on	--	on	--	--	on	on
815	--	on	on	on	--	on	--	--	on	on
816	on	on	on	on	--	on	--	--	on	on
817	--	--	--	--	on	on	--	--	on	on
818	on	--	--	--	on	on	--	--	on	on
819	--	on	--	--	on	on	--	--	on	on
820	on	on	--	--	on	on	--	--	on	on
821	--	--	on	--	on	on	--	--	on	on
822	on	--	on	--	on	on	--	--	on	on
823	--	on	on	--	on	on	--	--	on	on
824	on	on	on	--	on	on	--	--	on	on
825	--	--	--	on	on	on	--	--	on	on
826	on	--	--	on	on	on	--	--	on	on
827	--	on	--	on	on	on	--	--	on	on
828	on	on	--	on	on	on	--	--	on	on
829	--	--	on	on	on	on	--	--	on	on
830	on	--	on	on	on	on	--	--	on	on
831	--	on	on	on	on	on	--	--	on	on
832	on	on	on	on	on	on	--	--	on	on

ID table (833 ~ 896)

ID	1	2	3	4	5	6	7	8	9	10
833	--	--	--	--	--	--	on	--	on	on
834	on	--	--	--	--	--	on	--	on	on
835	--	on	--	--	--	--	on	--	on	on
836	on	on	--	--	--	--	on	--	on	on
837	--	--	on	--	--	--	on	--	on	on
838	on	--	on	--	--	--	on	--	on	on
839	--	on	on	--	--	--	on	--	on	on
840	on	on	on	--	--	--	on	--	on	on
841	--	--	--	on	--	--	on	--	on	on
842	on	--	--	on	--	--	on	--	on	on
843	--	on	--	on	--	--	on	--	on	on
844	on	on	--	on	--	--	on	--	on	on
845	--	--	on	on	--	--	on	--	on	on
846	on	--	on	on	--	--	on	--	on	on
847	--	on	on	on	--	--	on	--	on	on
848	on	on	on	on	--	--	on	--	on	on
849	--	--	--	--	on	--	on	--	on	on
850	on	--	--	--	on	--	on	--	on	on
851	--	on	--	--	on	--	on	--	on	on
852	on	on	--	--	on	--	on	--	on	on
853	--	--	on	--	on	--	on	--	on	on
854	on	--	on	--	on	--	on	--	on	on
855	--	on	on	--	on	--	on	--	on	on
856	on	on	on	--	on	--	on	--	on	on
857	--	--	--	on	on	--	on	--	on	on
858	on	--	--	on	on	--	on	--	on	on
859	--	on	--	on	on	--	on	--	on	on
860	on	on	--	on	on	--	on	--	on	on
861	--	--	on	on	on	--	on	--	on	on
862	on	--	on	on	on	--	on	--	on	on
863	--	on	on	on	on	--	on	--	on	on
864	on	on	on	on	on	--	on	--	on	on

ID	1	2	3	4	5	6	7	8	9	10
865	--	--	--	--	--	on	on	--	on	on
866	on	--	--	--	--	on	on	--	on	on
867	--	on	--	--	--	on	on	--	on	on
868	on	on	--	--	--	on	on	--	on	on
869	--	--	on	--	--	on	on	--	on	on
870	on	--	on	--	--	on	on	--	on	on
871	--	on	on	--	--	on	on	--	on	on
872	on	on	on	--	--	on	on	--	on	on
873	--	--	--	on	--	on	on	--	on	on
874	on	--	--	on	--	on	on	--	on	on
875	--	on	--	on	--	on	on	--	on	on
876	on	on	--	on	--	on	on	--	on	on
877	--	--	on	on	--	on	on	--	on	on
878	on	--	on	on	--	on	on	--	on	on
879	--	on	on	on	--	on	on	--	on	on
880	on	on	on	on	--	on	on	--	on	on
881	--	--	--	--	on	on	on	--	on	on
882	on	--	--	--	on	on	on	--	on	on
883	--	on	--	--	on	on	on	--	on	on
884	on	on	--	--	on	on	on	--	on	on
885	--	--	on	--	on	on	on	--	on	on
886	on	--	on	--	on	on	on	--	on	on
887	--	on	on	--	on	on	on	--	on	on
888	on	on	on	--	on	on	on	--	on	on
889	--	--	--	on	on	on	on	--	on	on
890	on	--	--	on	on	on	on	--	on	on
891	--	on	--	on	on	on	on	--	on	on
892	on	on	--	on	on	on	on	--	on	on
893	--	--	on	on	on	on	on	--	on	on
894	on	--	on	on	on	on	on	--	on	on
895	--	on	on	on	on	on	on	--	on	on
896	on	on	on	on	on	on	on	--	on	on

ID table (897 ~ 960)

ID	1	2	3	4	5	6	7	8	9	10
897	--	--	--	--	--	--	--	on	on	on
898	on	--	--	--	--	--	--	on	on	on
899	--	on	--	--	--	--	--	on	on	on
900	on	on	--	--	--	--	--	on	on	on
901	--	--	on	--	--	--	--	on	on	on
902	on	--	on	--	--	--	--	on	on	on
903	--	on	on	--	--	--	--	on	on	on
904	on	on	on	--	--	--	--	on	on	on
905	--	--	--	on	--	--	--	on	on	on
906	on	--	--	on	--	--	--	on	on	on
907	--	on	--	on	--	--	--	on	on	on
908	on	on	--	on	--	--	--	on	on	on
909	--	--	on	on	--	--	--	on	on	on
910	on	--	on	on	--	--	--	on	on	on
911	--	on	on	on	--	--	--	on	on	on
912	on	on	on	on	--	--	--	on	on	on
913	--	--	--	--	on	--	--	on	on	on
914	on	--	--	--	on	--	--	on	on	on
915	--	on	--	--	on	--	--	on	on	on
916	on	on	--	--	on	--	--	on	on	on
917	--	--	on	--	on	--	--	on	on	on
918	on	--	on	--	on	--	--	on	on	on
919	--	on	on	--	on	--	--	on	on	on
920	on	on	on	--	on	--	--	on	on	on
921	--	--	--	on	on	--	--	on	on	on
922	on	--	--	on	on	--	--	on	on	on
923	--	on	--	on	on	--	--	on	on	on
924	on	on	--	on	on	--	--	on	on	on
925	--	--	on	on	on	--	--	on	on	on
926	on	--	on	on	on	--	--	on	on	on
927	--	on	on	on	on	--	--	on	on	on
928	on	on	on	on	on	--	--	on	on	on

ID	1	2	3	4	5	6	7	8	9	10
929	--	--	--	--	--	on	--	on	on	on
930	on	--	--	--	--	on	--	on	on	on
931	--	on	--	--	--	on	--	on	on	on
932	on	on	--	--	--	on	--	on	on	on
933	--	--	on	--	--	on	--	on	on	on
934	on	--	on	--	--	on	--	on	on	on
935	--	on	on	--	--	on	--	on	on	on
936	on	on	on	--	--	on	--	on	on	on
937	--	--	--	on	--	on	--	on	on	on
938	on	--	--	on	--	on	--	on	on	on
939	--	on	--	on	--	on	--	on	on	on
940	on	on	--	on	--	on	--	on	on	on
941	--	--	on	on	--	on	--	on	on	on
942	on	--	on	on	--	on	--	on	on	on
943	--	on	on	on	--	on	--	on	on	on
944	on	on	on	on	--	on	--	on	on	on
945	--	--	--	--	on	on	--	on	on	on
946	on	--	--	--	on	on	--	on	on	on
947	--	on	--	--	on	on	--	on	on	on
948	on	on	--	--	on	on	--	on	on	on
949	--	--	on	--	on	on	--	on	on	on
950	on	--	on	--	on	on	--	on	on	on
951	--	on	on	--	on	on	--	on	on	on
952	on	on	on	--	on	on	--	on	on	on
953	--	--	--	on	on	on	--	on	on	on
954	on	--	--	on	on	on	--	on	on	on
955	--	on	--	on	on	on	--	on	on	on
956	on	on	--	on	on	on	--	on	on	on
957	--	--	on	on	on	on	--	on	on	on
958	on	--	on	on	on	on	--	on	on	on
959	--	on	on	on	on	on	--	on	on	on
960	on	on	on	on	on	on	--	on	on	on

ID table (961 ~ 1024)

ID	1	2	3	4	5	6	7	8	9	10
961	--	--	--	--	--	--	on	on	on	on
962	on	--	--	--	--	--	on	on	on	on
963	--	on	--	--	--	--	on	on	on	on
964	on	on	--	--	--	--	on	on	on	on
965	--	--	on	--	--	--	on	on	on	on
966	on	--	on	--	--	--	on	on	on	on
967	--	on	on	--	--	--	on	on	on	on
968	on	on	on	--	--	--	on	on	on	on
969	--	--	--	on	--	--	on	on	on	on
970	on	--	--	on	--	--	on	on	on	on
971	--	on	--	on	--	--	on	on	on	on
972	on	on	--	on	--	--	on	on	on	on
973	--	--	on	on	--	--	on	on	on	on
974	on	--	on	on	--	--	on	on	on	on
975	--	on	on	on	--	--	on	on	on	on
976	on	on	on	on	--	--	on	on	on	on
977	--	--	--	--	on	--	on	on	on	on
978	on	--	--	--	on	--	on	on	on	on
979	--	on	--	--	on	--	on	on	on	on
980	on	on	--	--	on	--	on	on	on	on
981	--	--	on	--	on	--	on	on	on	on
982	on	--	on	--	on	--	on	on	on	on
983	--	on	on	--	on	--	on	on	on	on
984	on	on	on	--	on	--	on	on	on	on
985	--	--	--	on	on	--	on	on	on	on
986	on	--	--	on	on	--	on	on	on	on
987	--	on	--	on	on	--	on	on	on	on
988	on	on	--	on	on	--	on	on	on	on
989	--	--	on	on	on	--	on	on	on	on
990	on	--	on	on	on	--	on	on	on	on
991	--	on	on	on	on	--	on	on	on	on
992	on	on	on	on	on	--	on	on	on	on

ID	1	2	3	4	5	6	7	8	9	10
993	--	--	--	--	--	on	on	on	on	on
994	on	--	--	--	--	on	on	on	on	on
995	--	on	--	--	--	on	on	on	on	on
996	on	on	--	--	--	on	on	on	on	on
997	--	--	on	--	--	on	on	on	on	on
998	on	--	on	--	--	on	on	on	on	on
999	--	on	on	--	--	on	on	on	on	on
1000	on	on	on	--	--	on	on	on	on	on
1001	--	--	--	on	--	on	on	on	on	on
1002	on	--	--	on	--	on	on	on	on	on
1003	--	on	--	on	--	on	on	on	on	on
1004	on	on	--	on	--	on	on	on	on	on
1005	--	--	on	on	--	on	on	on	on	on
1006	on	--	on	on	--	on	on	on	on	on
1007	--	on	on	on	--	on	on	on	on	on
1008	on	on	on	on	--	on	on	on	on	on
1009	--	--	--	--	on	on	on	on	on	on
1010	on	--	--	--	on	on	on	on	on	on
1011	--	on	--	--	on	on	on	on	on	on
1012	on	on	--	--	on	on	on	on	on	on
1013	--	--	on	--	on	on	on	on	on	on
1014	on	--	on	--	on	on	on	on	on	on
1015	--	on	on	--	on	on	on	on	on	on
1016	on	on	on	--	on	on	on	on	on	on
1017	--	--	--	on	on	on	on	on	on	on
1018	on	--	--	on	on	on	on	on	on	on
1019	--	on	--	on	on	on	on	on	on	on
1020	on	on	--	on	on	on	on	on	on	on
1021	--	--	on	on	on	on	on	on	on	on
1022	on	--	on	on	on	on	on	on	on	on
1023	--	on	on	on	on	on	on	on	on	on
1024	on	on	on	on	on	on	on	on	on	on

Control protocol and baud rate must be set correctly to the camera in order to establish proper and stable communication between camera and control device. Be sure that the same protocol and baud rate are selected in control device, too. Presently 6 types of protocol and 3 levels of baud rate are provided by this speed dome, through an 8-bit DIP switch labeled DS2.

DS 2

remark:

2. "--" means to set the bit to "OFF" position
3. Bit 3 and 4 are for baud rate setup
4. Bit 5, 6 and 7 are for protocol selection
5. Bit 8 is reserved for future use

- Bit 3 and 4 are for baud rate setup. Same baud rate must be set up for the speed dome and control device, or communication fro control will fail.

3	4	Baud rate
--	--	2,400 bps
on	--	4,800 bps
--	on	9,600 bps

- First, installer needs to choose a communication protocol with bit number 5, 6 and 7. Be sure that the same protocol is chosen for camera and controller. The following table shows the 6 protocols provided in this camera. **Check what are available in the controller before choosing the protocol.**

5	6	7	Protocol
--	--	--	Pelco-D & P
on	--	--	Li-lin
--	on	--	Danycolor
on	on	--	Hunda
--	--	on	Samsung

note: Pelco D/P use the same pin for assignment. They are auto-recognized from one to another by the software in the camera.

4.3 RS-485 Network and Impedance

Transmission distances of RS-485 Bus

The 0.56mm (24AWG) twisted pair or higher grade wires are recommended for data transmission cable.

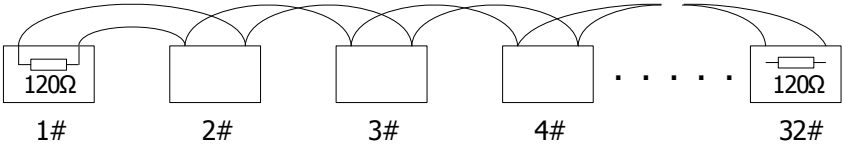
The maximum theoretical transmitting distances, for the AWG#24, are as follows:

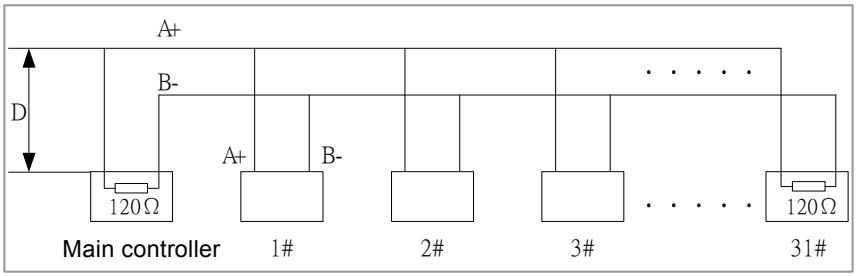
Baud Rate	Maximum Transmitting Distance
2400 Bps	1800m
4800 Bps	1200m
9600Bps	800m

If user selects thinner cables, or installs the dome in an environment with strong electromagnetic interference, or connects lots of equipment to the RS-485 bus, the maximum transmitting distance will be decreased. To increase the maximum transmitting distance, do the contrary, i.e. use thicker wire and keep the cable away from the interference.

Connection and termination resistor

The RS-485 standard requires a daisy-chain connection among the equipments. There must be termination resistors of proper impedance (typically 120 ohms, within the range from 90 to 250 ohms) at both ends of the connection.





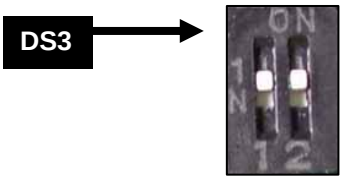
Impedance setup for the speed dome

Each speed dome camera has a termination resistor built in.

In a network of RS-485 chain, the speed domes are classified in two categories: **end unit** (such as the #31) and **node** (such as #1 through #30).

To set up the resistor correctly, installer must decide if the specific dome camera is the termination device or not, i.e. if it is at the end of the RS-485 chain.

The impedance setup is provided by the bit 1 and bit 2 of DIP switch **DS3 .**



Bit 1	Bit 2	Impedance
--	--	**Open (device on node)**
On	On	**Standard 120 ohms (device at end)**

- For nodes: Set both of Bit 1 and Bit 2 to **OFF** position
- For end unit: Set both of Bit 1 and Bit 2 to **ON** position

Impedance of the control unit

This is generally for two cases: controller with RS-485, and controller with RS-232.

Controller with RS-485:

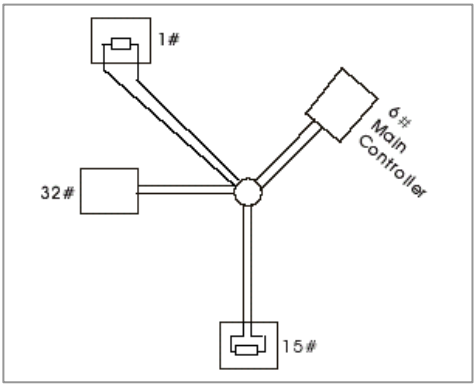
Most keyboard and video server in market have RS-485, which are equipped with termination resistor to drive a RS-485 system.

But most PC and notebook sort of devices have RS-232 or USB port but no RS-485. Therefore, for PC system, a RS-232 or USB to RS-485 converter is required. So installer must check out if the converter has proper termination resistor.

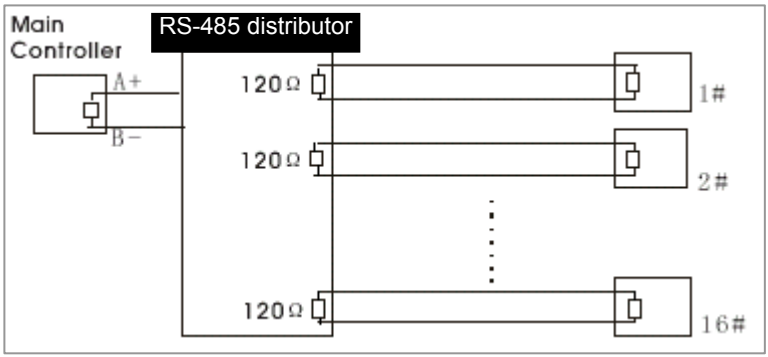
Problems in practical connection

In some circumstances user adopts a star configuration in practical connection. The termination resistors must be connected to the two equipment that are farthest away from each other, such as equipment 1# and 15# in the following picture. As the star configuration is not in conformity with the requirements of RS-485

standards, problems such as signal reflections, lower anti-interference performance arise when the cables are long in the connection. The reliability of control signals could be downgraded with the phenomena that the dome does not respond to or just responds at intervals to the controller, or does continuous operation without stop.



In such circumstances the usage of RS-485 distributor is recommended. The distributor can change the star configuration connection to the mode of connection stipulated in the RS-485 standards. The new connection achieves reliable data transmission.

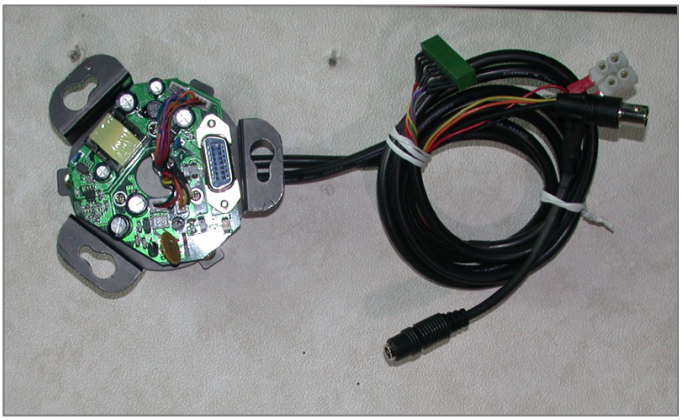


5. Mount the Speed Dome Camera

The camera and its mounting system are designed in modules. There are 5 methods to mount the PTZ camera, which are:

1. **Attached to the ceiling surface directly**
2. **Embedded into ceiling**
3. **Held to ceiling surface through a bracket (ceiling-drop)**
4. **Mounted to wall through a bracket**
5. **Adapted into external housing**

For all these five mounting ways, a common mounting base for mechanical locking and signal interface shall be adapted as below.



In the next page there is a list of all the accessories provided with the camera for various environments.

5.1 Mounting Accessory

The following items are supplied with the speed dome for the camera mounting.

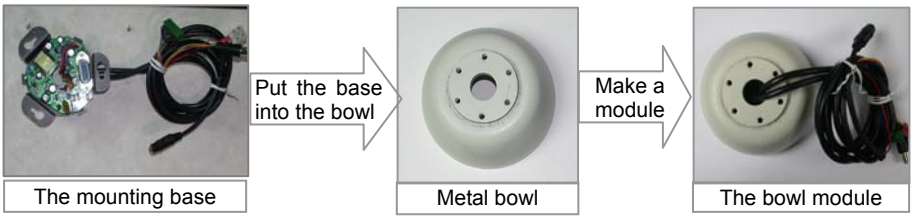
	Description	The look	The Use
1	**Mounting base**		The interface for holding the camera and bridging signals
2	**Metal Bowl holder**		To work with item 3 for creating ceiling or wall mount

5.2 Ceiling-drop mount (with CAM-CM)

Pre-assembling of the Bowl Module

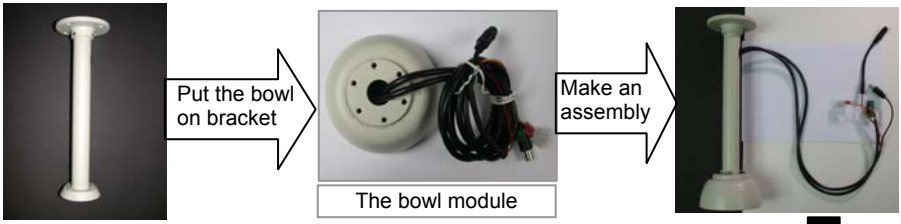
Both ceiling-drop and wall-mount needs to have a bowl module, an assembly of the mounting base and metal bowl supplied in the mounting kit, be built first.

Follow the flow chart on below for building up the bowl module.



To drop camera from ceiling, take the ceiling bracket (option item) and bowl module,

1. put the cables into the tube and have them come out from cable outlet
2. put the bracket on top of the bowl and tight them together with screws



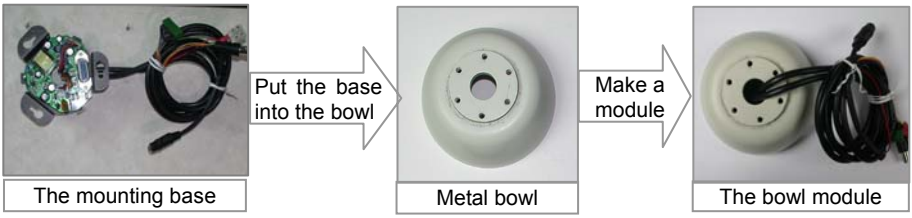
3. Locate the assembled piece onto the place the camera is to be mounted, and fix it on the surface completely with screws through the 4 holes on the bracket
4. Get the camera and plug it onto the base; watch for the direction of the connectors on camera and mounting base and be sure they are mated well. Then rotate the camera body counter-clockwise until it is completely locked
5. Put the safety screw (anti-loss) in locking position and screw it in

5.3 Wall mount (with CAM-WM)

Pre-assembling of the Bowl Module

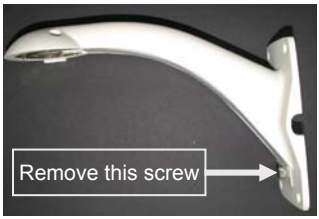
Both ceiling-drop and wall-mount needs to have a bowl module, an assembly of the mounting base and metal bowl supplied in the mounting kit, be built first.

Follow the flow chart on below for building up the bowl module.



Mount the camera on wall

To mount camera on wall:



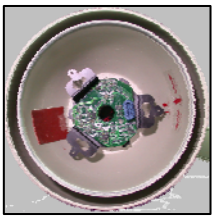
1. Take the wall-mount bracket (optional item), put it on the target place and fix it with the supplied screws (total of 4)
2. Take the cover-screw off the bracket, and remove the cover from bracket
3. Attach the bracket on top of the bowl and tight them together with screws
4. Put the cables in the trench of bracket, and all connectors come out through the cable outlet. Then put cover and screw back.

5. Locate the assembled piece onto the place the camera is to be mounted, and fix it on the surface completely with screws through the 4 holes on the bracket
6. Get the camera and plug it onto the base; watch for the direction of the connectors on camera and mounting base and be sure they are mated well. Then rotate the camera body counter-clockwise until it is completely locked
7. Put the safety screw (anti-loss) in locking position.

5.4 Use External Housing (with CAM-OH)

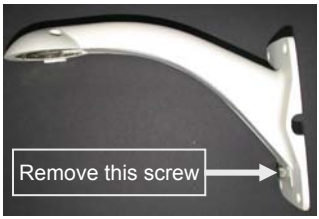
To operate speed dome cameras and maintain all functions in normal in severe temperature conditions, i.e. below -10°C or above 45°C, external housing is required.
CAM-OH has included two brackets (Ceiling-mount and Wall-mount bracket). You can choose which one you will like to used.

Inside the housing, the mounting base (item # 3 in the accessory list) is already built before it leaves factor. (see picture on the right).

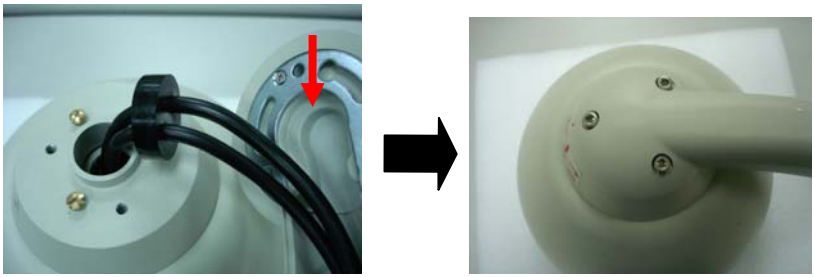


Wall mount Installation Procedure

1. Take the wall mount bracket, put it on the target place and fix it with the supplied screws (total of 4).
2. Take the cover-screw off from the bracket, and remove the cover.



3. Please stuff the water proof rub ring into the bracket. Then attach the bracket and lock it to the housing. Tight them on with screws.



4. Put the cables in the trench of bracket, and all connectors come out through the cable outlet. Then put bracket cover and screw back.

5. Load the camera into the housing. Be sure the connectors are well mated and then rotate the camera to lock it in position.

6. Put the safety screw in locking position and tight it.

Finished device

Ceiling mount Installation Procedure

1. Insert the cables pass through the tube. Please also stuff the water proof rub ring into the iron cover on tube.

2. Close the tube onto the outdoor housing and lock it to the housing. Tight them on with screws.

3. Finished.

6. Connecting Wires

The cables, wires and connector attached to the speed dome are categories into 4 major functions of:

1. Power
2. Video
3. RS-485
4. Alarm-in and out

They are easily distinguished from one to another, as being featured with different connectors. Refer to the picture on below to learn about cable and connector information.

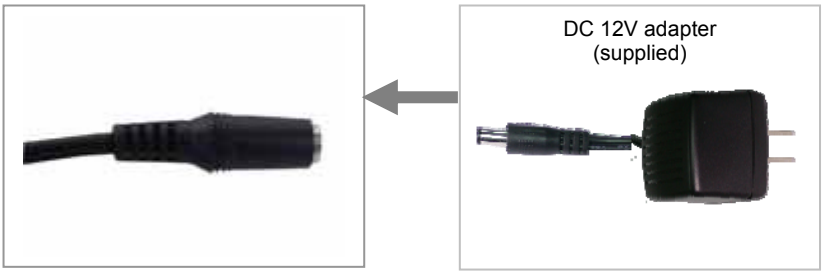
6.1 Power

The camera will obtain power source from two kinds of power: DC12V or AC24V.

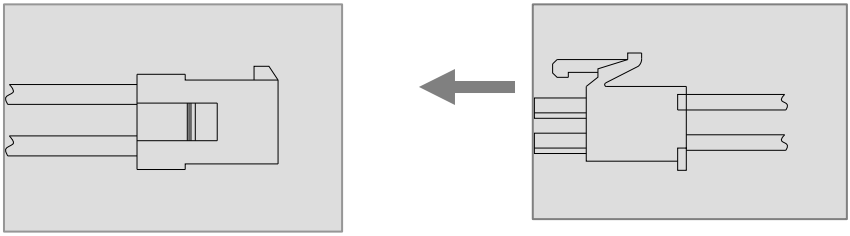
1. Without outdoor housing, DC12V:

   When operated with DC12V, the camera may consume 1000mA DC current in full load condition. To power the speed dome is simple. Get the DC jack from the camera, and connect the adapter plug to the jack.

   Note: To secure the safety and maintain correct function, always use the switching DC 12V / 1.5A power adapter. The **switching type power adapter** is strongly recommend. Due to switching power adapter can output stable power source, that can prevent the speed dome camera from damage.



2. With outdoor housing, AC24V:
   An AC adapter of 24V / 1.66A is supplied with the outdoor housing (CAM-OH) for the AC version. To power the camera, connect adapter to camera's power connector.



Power Connector on Speed Dome　　AC 24V Connector on Adaptor

As soon as power is supplied, the speed dome will enter "initial check" mode with the following procedures:

- Move the lens automatically for system check
- Screen comes up with blue picture and will be showing "starting" in white for around 3 seconds
- Then the camera will show normal image and get ready for control

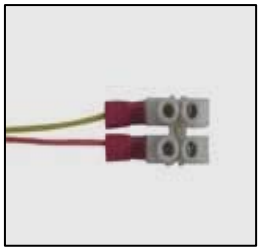
6.2 Video

Video output level of the camera, in standard of 1Vp-p, is delivered with female BNC connector at 75 ohms impedance. To transmit the video to receiver properly, it is recommended to use RG-59 A/U coaxial cable with stranded center conductor, with male BNC connectors on both ends.

RG-59 is also in 75 ohm impedance, which matches the camera's output impedance. The A/U version is recommended, rather than the version B/U, due of its superior performance on flexibility for resisting severe twisting, bending and other stresses which occur in many CCTV installations.

In case the installation distance is over than 500 meters (1,500 feet), additional amplifier might be needed to keep the video level and image quality.

6.3 RS-485



The camera adapts RS-485 in half-duplex pattern, which is a two-pin connectivity, as shown on the right picture.

Installer must pay attention to the polarity of these two pins – yellow wire is the POSITIVE end, and orange is the NEGATIVE. Communication between controller and camera will break and control will not function if they are reversely connected.

The RS-485 communication may run for 4,000 feet if the system network is properly built. Two important factors should be handled with care during the system build-up--- baud rate and termination impedance. More information about RS-485 are in sections "**Protocol and Baud rate**" and "**Applications**".

6.4 Alarm Input and Alarm Output

This camera is equipped with 3 alarm inputs and one alarm output for intrusion management. Installers may connect the inputs to the various sensors and program the camera to move and monitor specific spots for monitoring when evens take place. Dwell time for monitoring is programmable, subject to the system. Refer to the diagram on right for function assignments of the alarm I/O.

Alarm in	Wire Color	Alarm GND	Wire Color	Alarm out	Wire Color
Alarm in 1	Black	Alarm 1	Brown	N.O.	Gray
Alarm in 2	Red	Alarm 2	Orange	N.C.	Purple
Alarm in 3	Yellow	Alarm 3	Green	Com.	Blue

Alarm inputs

This speed dome has three alarm inputs, and each input is given by the software a companion view preset. When trigger single is sent to alarm-in, the following reactions will be taken by the speed dome:

- The pan-tilt mechanism will move lens to the preset.
- The alarm-out port will act.
- Via RS-485, the console (control unit) will be notified

The three inputs and their correspondent view presets are independent from one to another. Therefore, with the connections to three sensors, installer can set up camera to monitor three different spots with different dwell time.

Presets For Events

Default settings at the alarm-ins activations are:

If setting(s) is / are done to presets 17, 18 and 19 :

- At the trigger of alarm-in number 1, lens will move to preset 17.
- At the trigger of alarm-in number 2, lens will move to preset 18.
- At the trigger of alarm-in number 3, lens will move to preset 19.

If one or more positions of presets 17, 18 and 19 is / are empty:

- At the trigger of alarm 1, lens will move to preset 1 (preset 17 is empty)
- At the trigger of alarm 2, lens will move to preset 2 (preset 18 is empty)
- At the trigger of alarm 3, lens will move to preset 3 (preset 19 is empty)

Note:

- All the three alarm inputs are TTL level and triggered by negative signals.
- To utilize the default view positions, user must pre-set the desired monitor spots to presets number 17, 18 and 19 (or 1, 2 and 3).

Alarm-ON Management Protocol

With the presetting of its internal software, the PTZ camera will perform the following functions automatically at the triggering(s) to alarm-input(s):

- Camera is running Auto-pan when alarm signal(s) kicks in

1. When the first alarm signal hits this camera, lens will move to the corresponding presets (see relative information on above) at maximum speed of 300^{o} per second
2. Lens will stay at the preset position for 60 seconds
3. Camera will be back to the original auto-pan function after 60 seconds, if no second alarm-in jumps in this 60 second time frame.
4. In case second and third alarm kicks in during the 60 seconds, camera will move to the corresponding preset(s) and stay for 10 seconds initially, then move to the next alarm-preset for 5 seconds and keeps the motion in cycles until the 60 second time frame is over.
5. Camera will be back to its original auto-pan function after the 60 seconds.

- Camera is in steady mode when alarm signal(s) kicks in

  1. When the first alarm signal hits this camera, lens will move to the corresponding presets (see relative information on above) at maximum speed of 300^{o} per second
  2. Lens will stay at the preset position for 60 seconds
  3. Camera will be back to the original position after 60 seconds, if no second alarm-in jumps in this 60 second time frame.
  4. In case second and third alarm kicks in during the 60 seconds, camera will move to the corresponding preset(s) and stay for 10 seconds initially, then move to the next alarm-preset for 5 seconds and keeps the motion in cycles until the 60 second time frame is over.
  5. Camera will be back to its original position after the 60 seconds.

Alarm output

The alarm output is a hardware toggle switch of NC (normal close) and NO (normal open). In the event the camera receives trigger signal from one of the three alarm-inputs, the output ports will swap their states (i.e. the NC port will turn into OPEN condition, and the NO port will become CLOSE). The changing state can be used for activating various external alarm devices, such as siren, recorder, alarm-light or call-out system.
Alarm-on status will be automatically relieved at the 30th minute from the triggering point and PTZ will be back to the original conditions. To relief system the alarm-on status earlier, please use the MANUAL OFF on the controller (subject to the function's availability to the controller)

Warning:

The NC/NO port provided by alarm-out is a mechanical contact relay.
Make sure the device connected to the alarm-output does not drain current over than 0.5A and the voltage is not higher than DC 24V or AC 250V. Any load over these may damage the output port permanently.

7. Applications

The PTZ camera, by itself alone or encompassed in different numbers of domes with comprehensive matrix switching, is mainly for link to 4 different control means (also known in different terms such as **controller**, **console** or **host**):

- **PC-based system**
- **Keyboard controller**
- **DVR** (Digital Video Recorder)
- **Video server**

7.1 Controllers and RS-485

While most keyboards, DVRs and video servers are equipped with RS-485 port, which can be directly connected to speed dome, desk top and notebook computers usually don't provide direct output of RS-485. Therefore an interface device (signal converter) will be needed when computer is used as the controller.

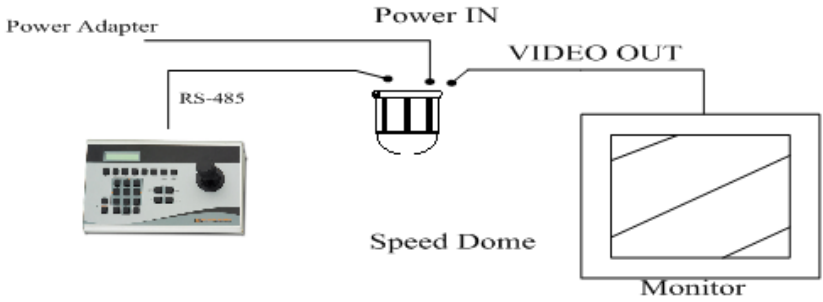
Signal converter

Note:
Check the PC first to see if RS-232 port or USB port is available to the specific unit. Some may have both while others only have one of the two.

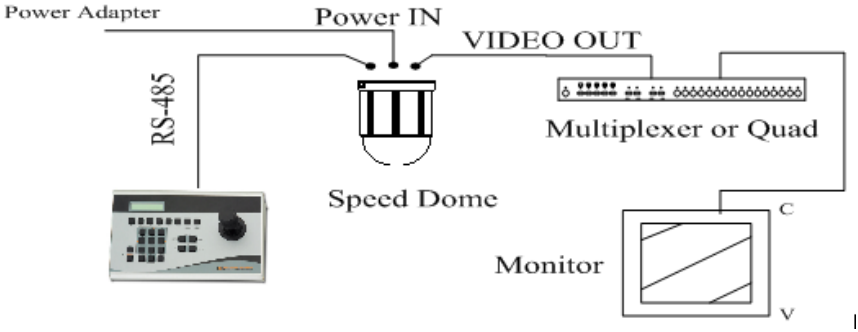
7.2 Connect single dome to console

- Connect the RS-485 of camera to controller (such as a keyboard) with a pair of twisted cable. Tele-control is sent via the cable between dome and controller.
- Video signal from the dome is sent to multiplexer, monitor, DVR or video server directly, normally through coaxial cable (usually the RG-59 A/U).
- Power (DC12V or AC24V) shall be applied to the camera via separate DC or AC adapter.
- Usually the termination resistor in speed dome is set to **OPEN** when only one is connected console.
- Select a proper protocol and corresponding baud rate for the controller. Be sure both sides (camera and controller) have the same protocol and baud rate.

Connect to keyboard + monitor

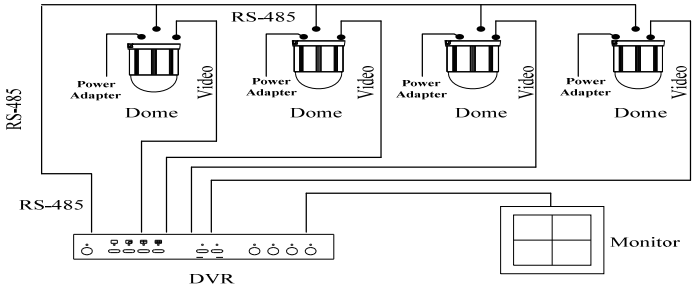


Connect to keyboard + MUX

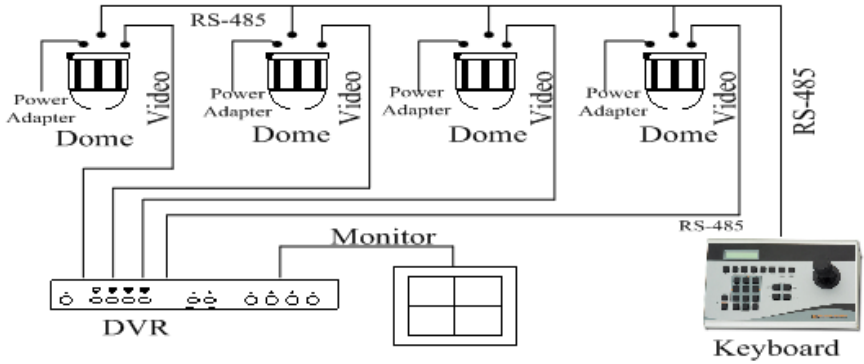


Connect Speed dome to standalone DVR

- Connect the RS-485 of camera to controller (in this case, the DVR) with a pair of twisted cable. Tele-control is conducted from the DVR via the cable between the PTZ device and DVR.
- Video signal from the dome is sent to DVR also, then forwarded to monitor through the multiplexer inside the DVR. Usually RG59 A/U coaxial cable is recommended for the video connection.
- Power (DC12V or AC24V) shall be applied to the camera via separate DC or AC adapter.
- Set the termination resistor in speed dome to **OPEN** mode (disconnected) if only one speed dome is connected console.
- If two or more speed domes are in the system, the termination resistor of END unit should be loaded (more information is in the next section).
- Select a proper protocol and corresponding baud rate for the DVR. Be sure both sides (PTZ camera and DVR) have the same protocol and baud rate.



- In case the DVR does not have PTZ control function, use a separate keyboard for the PTZ controlling. Protocol shall be properly selected, too.



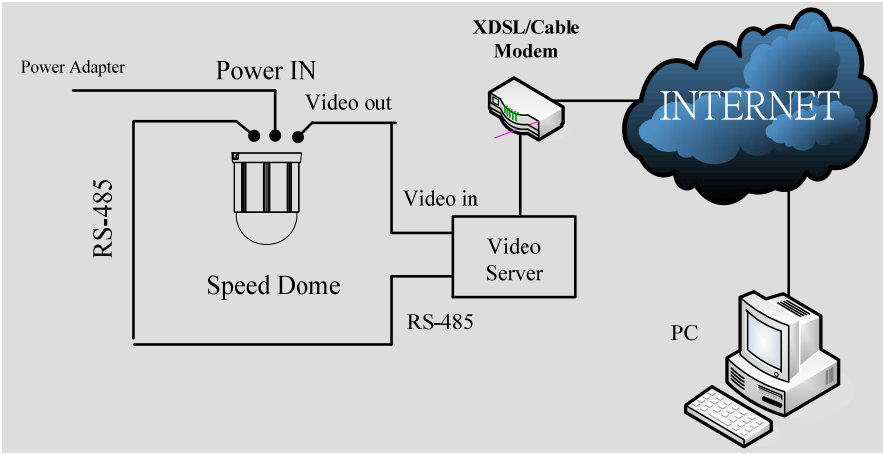
Connect Speed dome to video server

Video server, the contemporary device for transmitting video throughout LAN and WAN, can also be the controlling tool for this speed dome camera.

Most video servers in market are built with RS-485 communication port, and single video input for connecting one camera. To work with this PTZ camera, installer must connect both signals (video and RS-485) from the server to the camera, as the picture shown on below.

First of all, the **camera ID should be kept on number "0"** (zero) **or 1** (one) when it is linked to a video server, unless your video server requires different ID. Be sure the RS-485 polarity is correctly handled. Once the connectivity is completed, start the video server control panel on computer and follow the instructions on below during the video server setup

- Choose **Pelco D** as the control protocol
- choose **RS-485** as the communication format
- baud rate matches the setting in camera; "**2400"** is recommended
- parity is set to "**0**" (zero) or "**None**"
- Data bit is "**8**" (eight)
- Stop bit is "**1**" (one)



You may conduct control to the speed dome after these are correctly set up. For advanced functions, you must follow the instructions given by the video server manual.

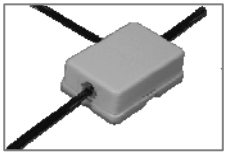
7.3 Connect two or more domes to console

As the RS-485 supports multi-drop topology, two or more domes can be connected to one controller in a system. For such application, the following rules must be kept:

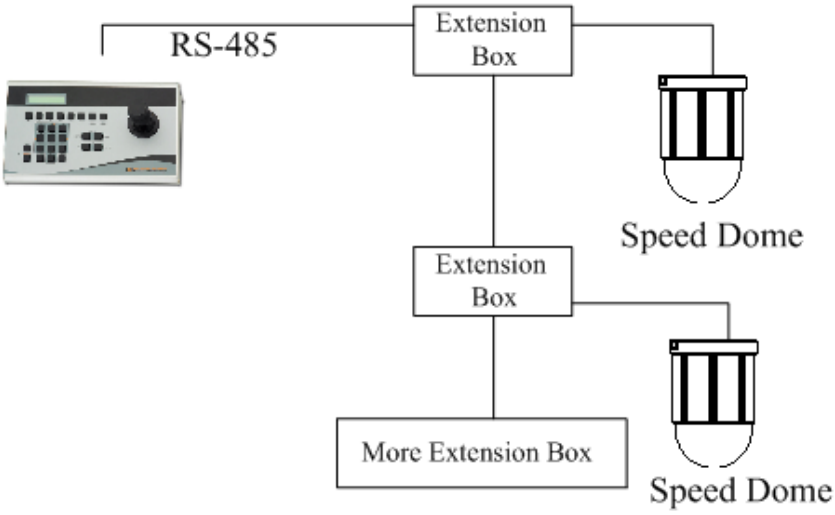
- All the speed domes should be connected to host in daisy chain pattern. Star type of configuration should be prohibited to avoid system instability.
- Each dome must have unique ID so communication data can be delivered to the correct target device.
- Impedance-match setup is also required to keep communication quality.

Connect the other end of the cable to a phone jack box with extension outlet of two. Installer must **pay attention to the pins** of the extension box to ensure the connection is correct.

To connect more cameras, copy the same procedure on above. You may continue extending the quantity of camera to its maximum number of 128 per network, if the control device has the capability of addressing that many ID..



Extension box

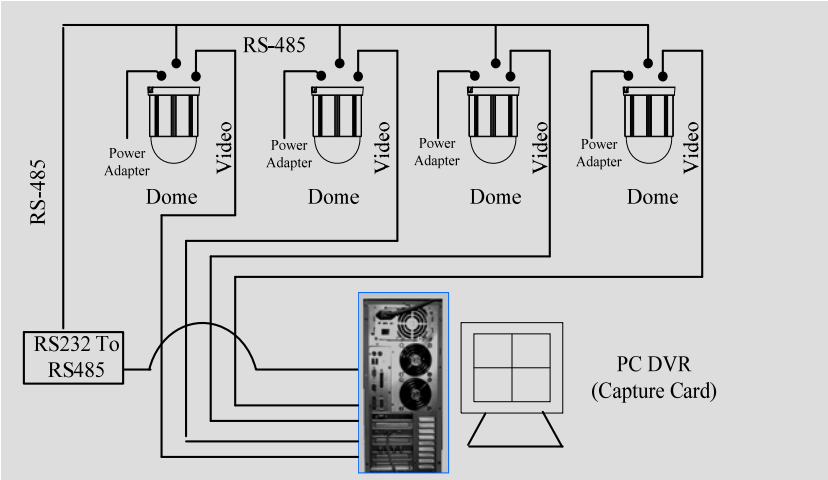


The extension wire and box are available in general electronic and phone shops.

■ Connect Speed Dome and PC (Capture Card)

When PC is used as the console, installer needs to connect both of video and RS-485 signals to PC separately.
Most capture cards have 4 video input per card, and normally each PC can handle 4 cards, meaning up to 16 cameras can be hooked to one PC.

- Video: connect the camera video to the video-in of capture card.
- RS-485: the RS-485 shall be connected to the RS-232 or USB port through an signal converter. Refer to the previous section for the establishment of the RS-485 network (watch the different ways of impedance setup for terminal device, for single or multiple domes per network)



- Power: camera's power is to be connected locally with the supplied DC or AC adapter.

8. Camera setup --- OSD functions

For the version with Power Zoom, many functions are available to users for setup and fine tune through controllers. To access the functions and make adjustment, follow the instructions on below:

(**NOTE**: all the procedure in this paragraph is NOT applied to the version of vari-focal lens)

8.1 OSD operation

This PTZ camera has many functions available to users' for setting and adjusting. Most of these functions are accessible through OSD (On-Screen-Display) menu.

In OSD table 1 on the following page, you may find summary of all the OSD functions provided in the speed dome.

In OSD table 2, following the table A, you will find a table of the keys and buttons used for OSD operation might be used in different controllers you.

hereunder is the briefing for the open of OSD

1.	AcutVista keyboard (MKB-3010 / DVR):	menu button
2.	keyboards from other makers:	call preset 88
		save preset 95
3.	GeoVision software	OSD button
4.	Other software	double click on preset 1 (quickly)

Advanced settings to DSP and optical functions are also available in the OSD menu, in the title "CAMERA" of the main page.

Warning:

OSD setup and control are relatively sophisticated. To make proper adjustments, it is suggested to consult with the original installer or experienced technician.

In case of getting lost or mess in setting, find the "Default" option, activate it and you will retrieve the factor settings and get back to the original status.

In the next page there will be more information about what are available for camera setup through OSD, and how to do.

8.2 System Info

To choose your controller and review the basic setup done to this unit.

- Controller: Keyboard and DVR are two most common devices used for PTZ control. However, controllers are sometimes very different in certain functions, which you may find PTZ works perfectly with certain controllers but not with the some others.
  This happens quite common to DVR, particularly, as many DVR devices don't provide enough control buttons on their panels (especially for OSD operation), and such handicap could make PTZ or camera controls impossible.
  To solve the issue, this camera offers choices – for the controllers which don't have enough buttons, you may use alternative keys. (see **OSD table 2** in previous page)
  We suggest you to check controller list, which is embedded in the sub-menu, and select the one that matches yours.
- Info: To show you the current setting of protocol, baud rate, camera ID and firmware version. Protocol, baud rate and ID are set up with the DIP switches
- Return: To return to the main OSD menu

8.3 Display

To decide whether to display the number and name of this camera, current preset and the zoom / focus information on the screen.

Camera ID: show or not show the number of this camera on display. Choose ON or off (default is OFF)

Camera Name: show or not show the name of this camera. Default is OFF. when ON is selected, give the name in the next layer. Naming is by choosing alphanumeric characters from the list (displayed one per time). Maximum length is 16.

Preset Name: show or not show the names of presets. Default is OFF when ON is selected, give the name in the next layer. Rule is the same as naming the camera (see above lines)

Preset Number: show or not show the numbers of presets. Default is OFF.

PTZ Position: show or not show pan, tilt, zoom positions. Default is OFF.

8.4 Camera

This section is to let you choose the correct camera version, define or adjust the image and optical functions, and decide the zooming speed.

Camera Type: Show camera version.

Zoom Speed: to set the speed of zooming. It is recommended that you test different speed before making final choice. Fast speed saves time but may cause missing of the best position for image size. Slow speed does the opposite for the good and bad.

Advance Setting: Most of the camera's DSP and optical functions are to be setting or adjusted here, under the sub-title.

Cam Title: This is for setting and showing camera name;
Similar function is available in the main page, so we suggest you leave this OFF constantly.

White Bal: White balance function is for setting color temperature based on the environment the camera is in, or personal preference:

ATW: Auto-Tracking-White balance. ATW checks the whole image, weights all colors in the picture and updates the white level and color temperature, which is good for constant changing scene.

Indoor Indoor is a mode of ATW but tends for more blue

Outdoor Outdoor is also an ATW mode giving more red for imaging

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The indoor and outdoor modes are in the sub-page of item ATW for versions of 30x, 23x and 10x, while they are in the same OSD page the ATW is listed for the 37x version

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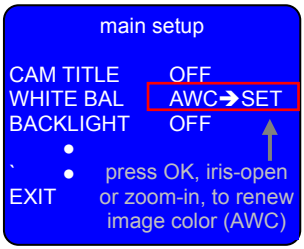
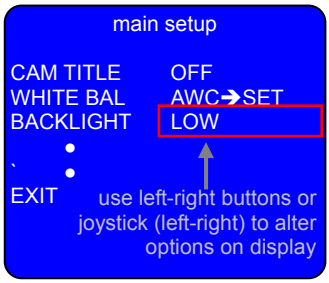
AWC: Auto-White-Balance.
Camera will make color calibration to the picture for once and keep the color temperature until the next order is manually given. To refresh the color, you need to make a manual trigger to the AWC, with it shown on the display.



Manual: to adjust color preference manually. Manual setting is to let you fix the color temperature. This mode can be good choice for indoor and static environment.
If the lighting is tungsten or alike (more natural), try to add more blue or reduce red a little; If lighting is fluorescent or within white spectrum, try to add more red or reduce the blue.
Default values are 29 for RED, 41 for BLUE; we suggest you not to give setting away from these two default numbers by much.

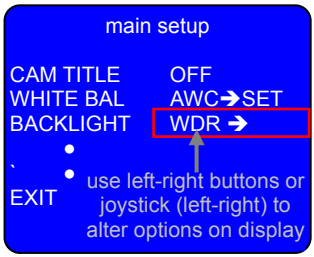
Back light: Backlight function is for improving the image quality in the scene that strong sport light source(s) stays behind the object, which will wash out <saturate> the image considerably.



When backlight function is engaged, it reduces exposure time and video gain (if necessary) to avoid over- exposure.

You are suggested to make tests with all the options in list on site, in order to make correct setting and final choice.

WDR WDR is a special BLC used for one scene that has part in high light and other part is much darker.
WDR makes two exposures for one image. When this function is engaged, the CCD will make the 1st exposure at high speed (1/6,000 or 1/10,000 sec) to form an image of less brightness. The next shot is at normal speed (1/50 or 1/60), to form an image of more brightness. The two then are superimposed into one picture, on which dark is in normal brightness and brighter part is dimmed, and finally delivers image of better contrast for shot in extreme contrast condition.



You are suggested to make tests, to all options in list, on site, in order to make final and correct choice.

Motion DET: Not an available function for this model.

Focus: Focusing is one of the most important and frequently-used functions of a zoom camera. This camera offers 3 focusing modes, each can be in-tracking or not with the zoom control.

see OSD table 3 (below) to know what focus function will react to different control or movement in each mode.

One push: The One-push function is to drive lens to make one-time auto-focusing per trigger. This function is auto-driven along with certain controls, such as making zoom change in manual focus mode…

Auto: The AUTO mode will enforce the lens to adjust its focusing automatically when object moves or scene has changed.

suggestion: if the camera is used for watching static zone constantly with little object movement, you may set AUTO FOCUS on;
If the camera is watching areas with heavy traffic, it is advised to choose other focus modes, or the image may look "shaking" a lot due to unnecessary focusing.

Manual: To fine tune and obtain the optimum focusing.
In certain conditions, such as weak contrast, dark scene … camera's auto focus function may not get the best focus position. In such case, you can adjust the focus manually.

focus action vs. settings

focus	One-push		full-AUTO		manual	
	zoom-tracking		zoom-tracking		zoom-tracking	
	ON	off	ON	off	ON	off
scene change	no action	no action	auto focus	auto focus	no action	no action
zooming	In-focus on trip	focusing at stop	In-focus on trip	auto focus	focusing at stop	focusing at stop
Panning & tilting	focusing at stop	focusing at stop	auto focus	auto focus	no action	no action
preset moving	focusing at stop	focusing at stop	auto focus	auto focus	no action	no action

Zoom TRK: this is to drive focus-lens to move along and be coordinated with zoom-lens, in order to keep image clear during the entire zooming journey.

Zoom SPEED: to set the speed of zooming.
Fast speed and slow speed have their own goodness and weakness.
Fast speed saves time but may cause missing of the best position for image size. Slow speed does the opposite for the good and bad.
It is suggested you make test to different speed before make the choice.

D-Zoom: to utilize digital zoom or not.
Digital zoom is to fill in the display with partial of the image, therefore will not give the same detail as the original image does. It could make help if the target object does not have much detail.

For the 5 versions of PTZ this manual serves, they have different ranges and operations.
Check the table on below for reference.

DISP Zoom MAG: to show or not show zoom number. Default is OFF.

Zoom INIT POS: To assign zoom position for power-up condition.

Lens Init: To re-calibrate the lens once. When you are seeing abnormal focusing (image is out-of-focus even you engage auto-focus), zooming or exposure (for example: complete white or black picture), you may refresh the camera with this function.

Exposure: Exposure is the key you can decide the image quality with. Exposure setting is highly dependant to the ambient light (type and intensity), and sometimes will need for different setting from one situation to another.

In this section you have 3 items that can change actual exposure and 3 others are for image quality modification:

- exposure factor: iris, shutter, sens-up
- image quality factor: brightness, AGC, SNR

Some of these factors are conflict to each other in certain modes; refer to OSD table 4 for the details.

Brightness: Human eyes are more sensitive to brightness than other image factors, meaning that brightness control is the most important video quality factor to us.

Brightness is very personal subjective, therefore you need try the adjustment with your system and the eyes of your own.

.reminder: brightness control is also available on most display. Check your display to ensure the monitor has correct brightness setting.

Iris: Iris is one major mechanisms for exposure level control, besides shutter speed.

Iris is the window for light to pass onto CCD (sensor), so the size of it will determine the energy of light can reach CCD at a time. Therefore, bigger iris provides brighter image, while smaller iris will give darker picture.

Iris options are AUTO and MANUAL;

suggestion: AUTO is more recommended for most conditions, unless you have particular environment (such as indoor with stable lighting), because it adapts better to the changing ambient illumination.

note: While iris is in auto mode, it has the priority for exposure control. Shutter speed will be fixed, ("---"on shutter) unless you manually apply shutter with other setting.

note: Manual control allows you to adjust iris size from complete closed ("0") to fully open ("100").
If you set iris to "manual", then shutter takes over the priority position for exposure control (seeing "ESC" on shutter setting).

Shutter: Shutter is the “pseudo” mechanism for controlling light energy by varying CCD exposure time. For normal indoor use, shutter speed is usually set to 1/60 sec (1/50 for PAL). In stronger light condition, shutter speed must be reduced, or image could be too bright. For darker scene, shutter should be increased.

This camera offers 3 options to you:

ESC (auto): If iris is set to “manual” mode, ESC is the choice used for the most conditions. Software will check light level and set up shutter speed automatically.

Manual: to assign a fixed shutter speed

This can be the choice if camera stays indoor with constantly stable ambient light.

In normal light, try speed between 1/60 --- 1/500. Be advised that, for speed higher than 1/120, color rolling can be easily observed.

In faint or dark, use extended exposure (x2, x4, ---); Try the low number first. If picture is still dark and with too much noise, try higher times.

Extreme high speed (1/2000 and above) and sens-up exposure (x64, x128) are not recommended unless in extreme condition.

Anti-Flicker: Automatically set the shutter speed to 1/50 (1/60 for PAL system) to avoid the flicker created by the normal lighting system (especially in the fluorescent light environment)

AGC: Auto-Gain-Control, for keeping video output level stable and stays within standard range. Turn AGC to high in dark, or low in strong light condition;

note: If you turn the AGC off, then SNR and sens-up functions will be defeated automatically. (see OSD table 4)

For the 4 grades of PTZ this manual serves, they have different AGC options. Check the table on below for reference..

SSNR: Super Noise Reduction, for improving quality of the video captured in dark. **OFF, low, mid** and **high** are the options

When camera works in dark and video gets weak, a lot of noise (snow-like spots) will be observed on image and recorded. Such noise will down grade the quality and performance of the entire security system, live view and recorder (DVR), significantly.
SNR is to reduce the noise when video is low due to darkness. Be aware that the SNR will also reduce image's sharpness, so try different noise reduction grade , check sharpness change, then decide which SNR level you will take.

SENS-UP: sens-up is an useful function for increasing image brightness in dark . The effect is in multiple levels with optional auto-control:.

Auto: when surrounding is detected for too dark, extended exposure will be automatically applied to increase image's brightness to provide reasonable signal-to-noise ratio.
You need to give the limit in sub-page.

Limit: Maximum times of extended exposure the function will do.

Off: to defeat this function.

Check the table on below to find for version difference.

Digital Slow Shutter	23x
Range	2 - 128
Auto-mode	●

note: If you turn the AGC off, or assign a fixed shutter speed (manual or A-FLK mode) the sens-up function will be defeated automatically. (see OSD table 4)

note: If you are familiar with still image camera, the sens-up is like the B-shutter.

suggestion: Because sens-up is carried out by extending exposure time, ghost-like image (in transparent and slow motion) will be unavoidable for moving objects. The higher number of sens-up is given, the worse such phenomena you may get. You are advised to make test to all the levels before making the final setting if the function is to be applied.

Special: In this section more advanced functions. However, some of them are not available in this model.

User Preset: not available to this model;
although you may access the sub-menu, do changes to the settings, they won't be executed nor saved.

➔ Keep it in OFF position all the time.

Privacy : Privacy setting and management function has been moved to the main page, in title of "Privacy Mask".

➔ Keep it in OFF position all the time.

DAY/NIGHT: An IR (Infra-Red) filter is usually placed between CCD and lens, to cut off non-visible light from going to CCD, for obtaining better image quality. Such filter must be removed when IR light source is provided in dark, or camera can not receive the IR signal and no image will be reproduced.

Mode Color: Camera software will keep video output in color format, with adjustable burst level. Changing burst level will cause color intense changes

B/W: burst on / off switch; taking burst down will turn image to real black-and-white, which would give you better resolution (details); In B/W mode, we suggest you keep burst OFF, for higher image resolution

Auto: camera software will decide image would be color or B/W based on the brightness level it "sees" on the object. If the level is high, color mode will be maintained; otherwise, the software will turn output into B/W.

PS: the 10x version provides one extra Auto mode (listed Auto1 and Auto2); the two Auto modes have same function but are for different brightness levels

NOTE: when you change to Auto from B/W mode, picture may remain in B/W; so we suggest you to make change from Color mode to Auto when needed

SYNC: This model does not provide external sync option, so nothing needs to be done for this.

Comm. Adj.: this is the communication setup for camera and the main CPU, not a user function. Please leave it untouched.
If you make change to it, camera will re-start automatically to retrieve normal communication..

Image Adj: To adjust image quality by changing the number of each item.

FREEZE: to freeze image permanently until off is re-assigned. (freezing image for running presets is provided in CONTROL page)

H-rev to turn image left to right

V-rev to turn image up-side down

Sharpness to improve the details of objects.

Color gain give moderate adjustment to color

Reset This is to help you to get the camera factory default back (NOT include pan-tilt settings).
Such refreshment is helpful if you are lost with settings, or when camera needs re-calibration to iris, focus or zoom position.

Exit Back to the main menu

8.5 Scan

You may choose the most suitable auto-run function among the various patterns given by this camera; When engaged, camera will move, in clockwise direction, from one preset to the next until stop is called.

Auto Pan 3 sub-items:

Pan / Tilt To do continuous pan/tilt between two positions A and B. Set up the start position, end position, moving speed and dwell first. If you wish to engage it right away, press RUN on the menu.

Pan Only This is for continuous panning between two spots A / B without changing the vertical position of lens.

Circle To perform continuous panning in 360°. You need to choose the start point and panning speed.

All Preset To make camera move around all the presets stored in this camera. Set up the speed and dwell, then start running the scan with RUN command on list.

Group Scan To make camera move around all the presets stored in this camera..
This camera automatically grouping the first 16 presets stored in it into 4 groups (1 ~ 4). The 4 groups can run separately, at their own speed and dwell length per group.
In the sub-menu there is of 4 groups. Each has its own selection of speed and dwell, and you may run or stop one of these four alone

Tour Scan This function allows you to select and run the 4 groups in different combinations.

. In each Group in the list, you may choose to turn it on or off. You may also redefine the speed and dwell length, or skip them. Once the selection is done, press RUN on menu to start the journey.

Patrol Patrol is defined as the scanning to selected Presets (among 1 to 16). To organize the route, go through all the 16 presets one by one with decision of ON or

OFF. Then choose the speed and dwell length for all the stops. Activate the function with RUN command on list.

Pattern Pattern is a function allows you create specific path with individually-defined stops, corresponding dwell and zoom position for continuous monitoring by auto-running. This camera provides 4 sets of pattern:

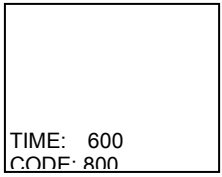
Start by selecting a number; pressing “enter” to enter the sub-menu

Record to make record for a moving pattern

Move lens to the starting position and adjust lens to grab the target. At this point record does NOT begin. To start the recording, exercise “call preset 1” (this may vary from one controller to another)

As soon as “call preset 1” is exercised, you will see the following message on screen, meaning that camera is ready for pattern recording

You have maximum 600 seconds or 800 movements for one pattern. Time starts counting down right after you enter the page.



Use joystick to create the pattern

To finish and quit the setting, exercise “call preset 1” again.

Preview To review the setting(s) stored in the camera by running it for once.

Run To start running the selected patterns. To stop it, engage STOP command on controller

Delete To eliminate the selected pattern setting

8.6 Control

In this section you can define how the camera will react to recovery from power down, long release from control, and make adjustment to image.

Auto Resume To decide whether camera will go auto-run after manual control stops for certain time. First you decide if you want to drive the camera into AUTO-RUN with ON / OFF selection, then you choose what type of auto-run and how long the camera will start doing it after control stops.

- ON / OFF — to turn this function on or shut it off
- Mode — the AUTO-RUN type you want to have. 6 modes are in option list:: Auto-pan (two spots), Auto-scan (all presets), Group scan (one of the 4 groups), Tour-scan (mixed groups) and Patrol (selected presets)
- Time — how long before the auto-run will go. Options are 1, 2, 3, 4, 5 and 10 minutes.

Power-on resume When this function is set ON and after power retrieves from breaking, this camera will automatically go the state it was running before power went down.

Preset Freeze This will keep image at rest when camera is running from one preset to another. It is useful if motion detection is set up in your DVR or you have network surveillance.
(a moving picture will cause false alarm)

Image Flip To turn the image up side down and left to right.

Return Back to the main menu

8.7 Privacy Mask

To provide mask for privacy protection. All models in this PTZ series have total 8 masks available.

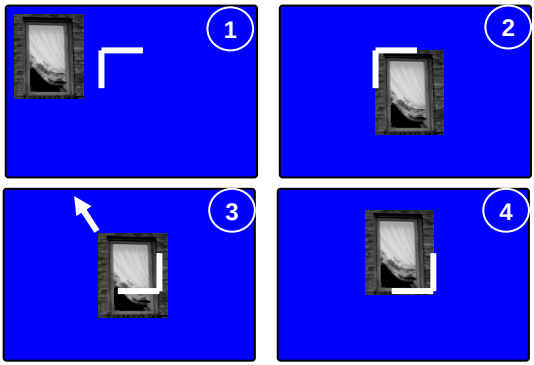
Two types of mask setup and grouping are provided for Day/Night versions (type A) and WDR versions (type B).

type of mask function	
Total number of mask / group	8 / 2
Mask per group	4

The 8 masks are separated into 2 groups equally -- each group has 4 masks;
You may configure and save all the 8 masks. But the two groups can not be applied on working simultaneously.

The 8 masks can be configured independently – save, delete, sizing, positioning, and ON/off.
Setup procedure for all the 8 masks is identical:

Position: To locate your mask and define its size.



(1) Enter “POSITION”, a mark “⌐“ (a capital letter L rotated for 90° into horizontal) will be on display, as the first boarder
(2) Move the target to the lower-right area of boarder -- DO NOT let your target over the boarder. Press “ENTER” when you are OK with the position.
(3) As soon as you press ENTER, the second boarder will appear on the screen. If it resides your target area,
(4) move lens into left-upper direction until the target is on the left-upper of the second boarder completely.

important:

It is strongly suggested to set up mask in comply with factors:

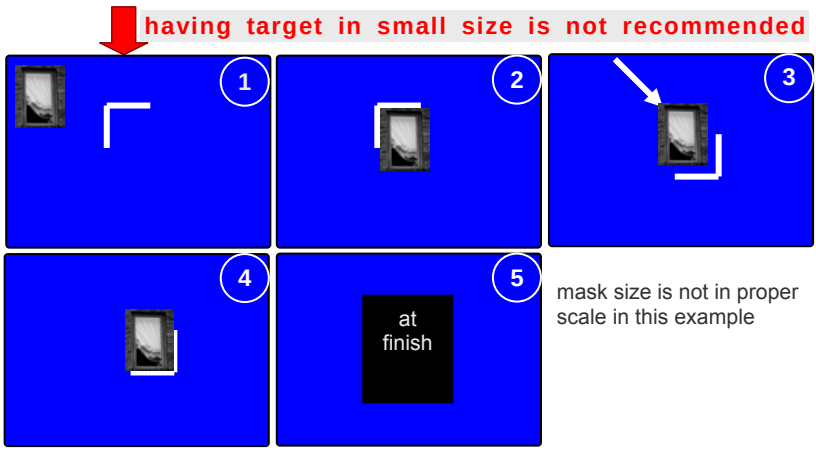
1. have the target in relative large size
2. give mask size twice big as the target's, or even larger

Although not recommended, it is also possible that the second boarder is out of the target area (fig.3; target is in small size). In this case, move the lens to right-lower direction until target hits the second boarder. This is not recommended because target may come out the mask when you zoom it in.

At the confirmation of the second boarder, black mask will appear in a proper size and block the target from being viewed. The black mask will also move to new position or change to new size, along with your PT and zoom in/out controls.

Enable: After the mask is successfully created, you need to decide if it will be engaged. This is the place for you to enable or shut off individual mask, individually.

Return Back to the main menu



8.8 Alarm

This camera has 8 sensor inputs and two relay outputs (toggle) for event management.

The alarm inputs can work with positive or negative-trigger source, with auto-detection. All the inputs are checked by software at power-on and monitored. If input status is reversed (i.e. changing from positive to negative or vise-versa), then event will be considered as is taking place.

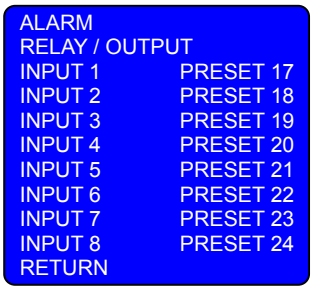
important:

To make the event detection (sensor) work properly with this PTZ camera, keep both of the camera and sensor in POWER-OFF mode until the wiring work is completed;
Also, power the sensors on before PTZ camera is switched on

If you did not follow the procedure on above, at the final movement, switch the PTZ camera off and on again to correct the initial status.

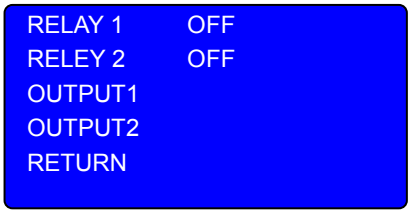
Controlled by the residential software, the camera can be managed for surveillance and producing alarm at event-triggering given by the alarm inputs.

You will see the menu on screen, in which there are two parts are to be arranged:



RELAY / OUTPUT To make arrangements for relays, in terms of on/off and the corresponding time-length.

Enter the sub-page and you will read



Relay 1&2 The relays built in this camera (what we call "alarm-out" in this manual) are mechanical switches that have three pins – NC (normal close), NO (normal open) and one common point.

This PTZ allows you to switch relays manually. Both of the relay 1 and 2 do the same function, with the only difference of control button.

On To switch on the device connected to this relay

Off To turn the device off by changing relay's status

Factor defaults are "DEFEAT (off)".

Make sure you have device connected to the correct pins.

Output 1&2 This is to decide, at event trigger, whether the relay would respond. Choose ON is you want this function armed at event.

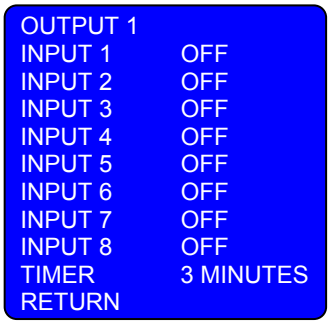
The assignment of input-output relationship is independent from one to others.

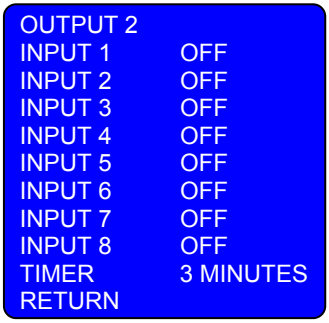
Default setting <for all> is OFF.

Timer: This is for you to decide, at the circumstance alarm signal(s) is detected and alarm output (relay) has reacted, how long you want to keep the relay in alarm-on status.

The default number is 3 minutes.

If timer is set for “0”, the Relay will keep the Alarm-on mode until it’s manually switched off.





Alarm Input 1 -8

The 8 alarm inputs have almost identical functions, except different PRESET positions are assigned to each input as the default.

Default position:
INPUT 1 ➔ PRESET 17
INPUT 2 ➔ PRESET 18
INPUT 3 ➔ PRESET 19
INPUT 4 ➔ PRESET 20
INPUT 5 ➔ PRESET 21
INPUT 6 ➔ PRESET 22
INPUT 7 ➔ PRESET 23
INPUT 8 ➔ PRESET 24

Through the OSD menu, you can redefine one or all the assignments. Options for assignment are from preset 1 to 32. Overlap (one preset is assigned for two or more inputs) is allowed.

Return Back to main menu

9. Pre-defined System Functions

Power-up action

After the power is first applied to a dome it will perform a self-test procedure. This calibrates and checks the basic functions of the dome. External controls are overruled during this self-test period.

After the self-test, the PTZ camera will be ready for control. If the device was running the Auto-pan function before power was broken, the speed dome will retrieve Auto Scan function until new control is given by an operator.

Tour group

The speed dome software automatically groups the first 16 presets into 4 tour groups. i.e. presets 1 ~ 4 is owned by group 1; Preset number 5 to 8 belong to group 2… etc.

When tour function is initiated, the P/T mechanism will start scanning automatically around all the presets included in the group.

How to initiate tour function is subject to controllers.

10. Specification

■ Camera Module and Lens

CCD	Manufacturer	Sony
	Resolution	520 TV lines
	Size	1/4”
Image control		OSD menu
Zoom	Optical	23x
	Digital	10x
Focal length		3.8 ~ 88.4 mm
Aperture size		F 1.6 ~ 3.0
Light sensitivity	Color mode	0.6 lux
	Black / white	0.1 lux

■ Pan / Tilt Functions

PT driving system		Stepping motors
Scan / Search	Navigation range	Pan 360° / continuous
		Tilt (90°)+ auto-rotation (180°)
	Navigation speed	0.25 ~ 240° / sec; programmable
	Preset Search	300° per second
Preset	Quantity	Max to 64 positions
	Dwell time	1 ~ 255 seconds
	Tour group	4
	Auto-pan	Yes
Communication		RS-485
Protocol		Pelco D, Pelco P,
Baud rate		2400, 4800, 9600
Camera ID		1 ~ 128

■ Miscellaneous

Video	Format	NTSC or PAL (optional)
	Output Level	1.0 V (typical)
Alarm function	Input	3 sets
	Input level	TTL 5V; Negative trigger
	Output	1 set; NC / NO
	Max. load of O/P port	DC24V / 1A or AC120V / 0.5A
Connectivity	Video	BNC female
	RS-485	Terminal block
	Power	DC input jack
Power consumption		DC 12V / 1A
Operation	Temperature	-10 ~ 50℃
	Humidity	20 ~ 85% RHD

Storage	Temperature	-20℃ ~ 60℃
	Humidity	20 ~ 100% RHD
Certification		FCC, CE
Inside the box	Dome camera	1 set
	User's manual	1 set
(Option)		
Installation Kit	Screw Pack	1 set
	Installation base	1 piece
	Metal bowl holder	1 piece